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LOYOLA UNIVERSITY CHICAGO

AUSTRALIA V. USA: INDIAN ENGINEERING STUDENTS PURSUING GRADUATE DEGREES ABROAD, AN ANALYSIS OF FACTORS INFLUENCING THE CHOICE AND LOCATION OF INSTITUTION

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE GRADUATE SCHOOL

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

PROGRAM IN CULTURAL AND EDUCATIONAL POLICY STUDIES

BY

LOUIS MICHAEL BERENDS

CHICAGO, ILLINOIS

MAY 2011

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Tower and Lake Shore campuses. I am proud to be associated with Loyola University Chicago.

For my wife, Andrea

Global changes are unprecedented, drastic and unpredictable.
All education will have to become global in the future.

—Josef A. Mestenhauser

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ABSTRACT

The global market of higher education is growing at a rapid pace. Prospective graduate students in engineering have more options – domestically and internationally – than ever before. At this moment, the international setting of engineering graduate programs continues to shift and expand. This study analyzes the decision-making processes of students from India who pursue graduate education in Australia and the United States of America. In this setting, decision-making processes of student choice were examined after study participants selected higher education institutions in Australian and U.S. The research question is: *why do graduate degree-seeking engineering students from India pursue studies in the United States and Australia?* In addressing this central question, this study seeks to understand the decision-making processes of students from India by undertaking a multi-methodological approach to the study of selection and choice of graduate institutions abroad.

CHAPTER ONE

STATEMENT OF PROBLEM

Each day the world becomes more and more interconnected. Advances in technology have produced increased access and opportunities for international travel, student exchanges, and knowledge transfer through the World Wide Web. Scholars in many disciplines draw on a range of "globalization theories" to understand the rapid evolution of an emerging global economy.[1] As the global market of higher education expands, academics in the field of comparative and international education use various theories of globalization.[2] Today, dilemmas arise when research on higher education

[1]For a wide range of scholarly books on this topic, *see*, Robert Rhoads. *The University, State, and Market: The Political Economy of Globalization in the Americas* (Stanford: Stanford University Press, 2006); Andrew Hurrell. *On Global Order: Power, Values, and the Constitution on International Society* (New York: Oxford University Press, 2008); Michael Barnett and Thomas G. Weiss (Eds.), *Humanitarianism in Question: Power, Politics, Ethics* (Cornell: Cornell University Press. 2009); Paul Collier, *The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It* (Oxford: Oxford University Press, 2007); Glyn Williams, Paula Meth, and Katie Willis, *New Geographies of the Global South: Developing Areas in a Changing World* (New York: Routledge, 2009); William Emmott, *Rivals: How the Power Struggle Between China, India and Japan Will Shape our Next Decade* (Orlando: Mariner Books, 2009); James A. Anderson. *Driving Change Through Diversity and Globalization: Transformative Leadership in the Academy* (Sterling: Stylus Publications, 2008); Parag Khanna, *The Second World: How Emerging Powers are Redefining Global Competition in the 21st Century* (New York: Random House, 2009); Jeffrey Sachs, *Common Wealth: Economics for a Crowded Planet*. (London: Penguin, 2008); Ted C. Lewellen, *The Anthropology of Globalization: Cultural Anthropology Enters the 21st Century* (London: Bergin & Garvey, 2002); Joel Spring, "Research on Globalization and Education," *Review of Educational Research* 78, no. 2 (June 2008): 330-363; and Anna Lee Saxenian, *The New Argonauts: Regional Advantage in a Global Economy* (Cambridge: Harvard University Press, 2006).

[2]Among other theoretical frameworks, scholars in the field of comparative and international education commonly use globalization as theory for conceptualizing education. For examples of globalization in scholarly literature in the field of comparative and international education, *see* Nicholes C. Burbules and Carlos Alberto Torres (Eds.), *Globalization and Education: Critical Perspectives* (New York: Routledge, 2000); Simon Marginson and Mark Considine, *Enterprise University: Power, Governance and Reinvention in Australia* (New York: Cambridge University Press, 2000); and David P. Baker and Gerald

systems attempts to compare and contrast phenomena such as increased student mobility and the "trends" that ensue.[3] As a result of intensified globalization processes, individuals are able to seek a degree in higher education outside of their home country due to increased access and opportunity. Central to this study is unraveling *why* students from India pursue graduation outside of their home country.

Comparative Education Context

In order to illustrate how this study fits into the field of comparative and international education, it is reasonable to begin with a definition. As defined by Erwin H. Epstein, Comparative Education is:

> a field of study that applies the intellectual tools of history and the social sciences to understanding international issues of education. As employed in this field, an international issue is one whose pursuit requires a conceptual framework that embodies a cross-societal context.[4]

For the purposes of my research, Epstein's definition of comparative *and* international education will be the guiding theoretical construct for my dissertation.[5] The international issue of education in my research is *why* students pursue graduate education abroad.

K. LeTendre, *National Differences, Global Similarities: World Culture and the Future of Schooling* (Stanford: Stanford University Press, 2005).

[3]My research will move beyond descriptive reports on international student mobility that captures these so-called "trends". However, it should be noted that statistics on global student mobility *are* important. More details on these primary source reports will be discussed later. For an example from the National Center for Educational Statistics (NCES), *see*, NCES, Integrated Postsecondary Education Data System (IPEDS) Fall 2008 Enrollment Survey. Retrieved online on August 15, 2009 at: http://nces.ed.gov/ipeds/

[4]Erwin H. Epstein, Loyola University Chicago's, Center for Comparative Education. Retrieved online on January 21, 2009 at: http://www.luc.edu/cce

[5]It is important to note that I will infuse "international" into Epstein's definition of comparative education hereafter to read, the field of "comparative *and* international education" (emphasis added). In international higher education, which is the scope of my research, this is an important distinction that adds to the international issue and conceptualization of the global market of higher education.

Additionally, the international issue here involves the emerging global market of higher education and the impact international students have on local and national settings. As will be discussed, the international issue here addresses the increase in the number of students entering higher education institutions and the subsequent financial, academic, and intercultural impact – or lack thereof – of international students on their host country. Analyzing the factors that influence students from India to pursue graduate degrees in engineering[6] and their choice and selection of an institution encapsulates the examination of higher education institutions in the U.S. and Australia.

Conceptual Framework

Stemming from Epstein's definition above, an extensive review of current and past scholarship in the field of comparative and international education will lay the foundation for the conceptual framework of my dissertation. More specific to my primary research question, "push/pull" theory on international student mobility will be a central analytic tool for my conceptual framework.[7] Mazzarol and Soutar define push and pull indicators of international school choice as:

> The global pattern of international student flows may be explained by a combination of 'push and pull factors' that encourage students to study overseas. 'Push' factors operate within the source country and initiate a student's decision to undertake international study. 'Pull' factors operate within a host country to make that country relatively attractive to

[6]Fields of engineering are defined in parallel to the Global Engineering Education Exchange (GE[3]), definition; "all Engineering disciplines including Computer Science." Retrieved online on February 3, 2010 at: http://www.iie.org/Content/NavigationMenu/Programs7/global-e3/global-e3.htm

[7]*See* T.W. Mazzarol and G.N. Soutar, ''Push-Pull Factors Influencing International Student Destination Choice," *Journal of Educational Management* 16, no. 2 (2002): 82-90. *See also,* U. Teichler. *Higher Education Systems: Conceptual Frameworks, Comparative Perspectives, Empirical Findings* (Rotterdam: Sense Publishers, 2007).

> international students. Some of these factors are inherent in the source country, some in the host country and others in the students themselves.[8]

This definition will be the guiding analytical tool for the ensuing discussion and analyses. In this context, pull variables, such as financial aid in the form of *scholarships, reputation* of graduate program, and *professional and work-related* opportunities can be seen as examples of influential exogenous factors that impact the decision-making process.[9] Push variables, on the other hand, may involve *family pressures*, *geographic proximity*, and *poor local job market*. These can be viewed as endogenous criteria that originate in India and capture the local conditions that lead to choice and selection of an institution of higher education outside India's national boundaries. "Why" a student from India selects an institution in Australia or the U.S. has a direct impact on the global market share of international students. As will be shown, the increase of students from India entering higher education in the U.S. and Australia has an economic impact on their host institutions and countries respectively. Thus, student mobility will provide the scope of analysis for comparative inquiry involving "international school choice."

International Higher Education

Higher education institutions (HEIs) in the global market are increasingly in competition to attract international students.[10] The competition stems from university

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[8]Mazzarol and Soutar, 82.

[9]Ibid., 83. *See also*, Friedrich Schneider, "Toward Substantive Research in Comparative Education," *Comparative Education Review* 10, no. 1 (February 1966): 16-17.

[10]Here, I define an "international student" as any person obtaining college credit to be applicable towards a degree earned at an accredited higher education institution outside of their country of origin. For an example of a recent piece on the competitive global market of higher education, *see* John Aubrey Douglass and Richard Edelstein, "The Global Competition for Talent: The Rapidly Changing Market for International Students and the Need for a Strategic Approach in the U.S.," *Center for Studies in Higher*

aspirations to seek the "best and the brightest" from all parts of the world.[11] Much of the past and current literature on higher education – and education in general – correlates HEIs with increased productivity in terms of domestic economic growth.[12] Solutions to national and global dilemmas have and continue to rely on HEIs for research and development to spawn innovation and productivity across varying sectors of the local and global economies. For example, it has been argued that educational attainment of international students has had an impact on skilled laborers in markets across a wide range of disciplines – specifically in the science, technology, engineering, and mathematics (STEM) fields.[13] Meanwhile, the sheer number of students entering HEIs

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Education, University of California, Berkeley 8, no. 9 (October 2009): 1-22. *See also*, Report to the Chairman, Subcommittee on International Organizations, Human Rights, and Oversight, Committee on Foreign Affairs, House of Representatives, "Higher Education: Approaches to Attract and Fund International Students in the United States and Abroad" (U.S. Government Accountability Office: Washington, D.C. April 2009), GAO-09-379; and William K. Cummings, "Going Overseas for Higher Education: The Asian Experience," *Comparative Education Review* 28, no. 2 (1984): 241-257.

[11]For examples and varying perspectives on the competition in the global market for higher education, *see* Joel Windle, "The Limits of School Choice: Some Implications for Accountability of Selective Practices and Positional Competition in Australian Education," *Critical Studies in Education* 50, no. 3 (September 2009): 231-246; and Tony Adams, P. Burgess, and R. Phillips, "Pathways in International Education: an Analysis of Global Pathways enabling Students to articulate from Secondary School to Higher Education in a Transnational context," in *Education Across Borders: Politics, Policy and Legislative Action*, edited by J. Fegan and M. H. Field (London: Springer, 2009): 179-197.

[12]For literature on the history of American higher education and its role in economic growth, *see* Laurence R. Veysey, *The Emergence of the American University* (Chicago: University of Chicago Press, 1970); Clark Kerr, "Commentaries on the Golden Age of the Research University," in *The Uses of the University* (Cambridge: Harvard University Press, 2001): 141-163; Rebecca S. Lowen, *Creating the Cold War University: The Transformation of Stanford* (Berkeley: University of California Press, 1997). John Thelin, *A History of American Higher Education* (Baltimore: Johns Hopkins University Press, 2004); Roger L. Geiger, *Research and Relevant Knowledge: American Research Universities since World War II* (New York: Oxford University Press, 1993); Hugh Davis Graham and Nancy Diamond, *The Rise of American Research Universities: Elites and Challengers in the Postwar Era* (Baltimore: Johns Hopkins University Press, 1997).

[13]*See* Lana Khasawneh, Salah Hailat, and Mohhamad Jawarneh, "University Students' Readiness for the National Workforce: A Study of Vocational Identity and Career Decision-Making," *Mediterranean Journal of Educational Studies* 12, no. 2 (June 2007): 27-42; Jeannette Taylor and David Pick, "The Work Orientations of Australian University Students," *Journal of Education and Work* 21, no. 5 (December

throughout the world continues to grow at an unprecedented rate.[14] Students from every corner of the globe have increased opportunity to gain an "international higher education" by pursuing a degree abroad. Identifying the key features and characteristics of "why" international students in the STEM fields select U.S. and Australian HEIs (one of these countries over the other), is important in order to add to the depth of scholarly literature in the field of comparative and international education; and to national and local economies in particular.

Indian Students in Australian Higher Education

As the U.S. loses its dominance of the global market of higher education, several countries have emerged as rival contenders.[15] In Australian HEIs, international students account for a staggering 34% of overall enrollment.[16] As a result of decreased government spending towards HEI funding initiatives, the Australian strategy for

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2008): 405–21; and John Buchanan, Sue Gordon, and Sandy Schuck, "From Mentoring to Monitoring: The Impact of Changing Work Environments on Academics in Australian Universities," *Journal of Further and Higher Education* 32, no. 3 (August 2008): 241-50. For a related work on international students, but more specific to the field of accounting, *see* Yew Ming Chia, Kian Chye Koh, and John Pragasam, "An International Study of Career Drivers of Accounting Students in Singapore, Australia, and Hong Kong," *Studies in Higher Education* 33, no. 2 (April 2008): 122-47.

[14]*See* Organization for Economic Co-operation and Development (OECD). Education at a Glance 2009: OECD Indicators. Retrieved online on September 18, 2009 at: http://www.oecd.org/document/24/0,3343,en_2649_39263238_43586328_1_1_1_1,00.html. *See also*, Kemal Gürüz, *Higher Education and International Student Mobility in the Global Knowledge Economy*, (Albany: State University of New York Press, 2008).

[15]Australia, New Zealand, and Canada have taken some of the global market share of international students from the U.S. and United Kingdom. For more information, s*ee* P. Mooney and S. Neelakantan, "No Longer Dreaming of America," *The Chronicle of Higher Education* 55 no. 7 (2004): 41-43; J. Paskey, "Canada Speeds Up Some Visas," *The Chronicle of Higher Education* 50 no. 11 (2003): 47; Alison Damast, "U.S. Business Schools: Why Foreign MBAs are Disappearing," *Business Week* (August 3, 2009); and "India And China Fuel Foreign Students Market," *The Epoc Times*, September 24, 2009.

[16]Australia Education International, *Research Snapshots, International Student Enrollments in Higher Education in 2008*. Retrieved online on June 21, 2009 at: http://www.aei.gov.au/AEI/PublicationsAndResearch/Snapshots/49SS09_pdf.pdf

maintaining university operations has come to rely heavily on international students as a major "export" industry.[17] According to recent government statistics, international students contributed 15.5 billion (Australian dollars) to the Australian economy in the most recent academic year.[18] In order to maintain a steady stream of revenue from overseas students, Australian HEIs have been compelled to market themselves in an aggressive manner.[19] This intensified marketing by HEI administrators may be seen in the large increase of international students in Australia. Without a doubt, competition has

[17]The Australian government considers education as an "export" industry in both onshore and offshore settings. *See* Australia Education International, *Research Snapshots, Export Income to Australia from Education Services in 2008-09*. Retrieved online on December 12, 2009 at: http://www.aei.gov.au/AEI/PublicationsAndResearch/Snapshots/Default.htm. *See* also, Anne Chapmana and David Pyvis, "Quality, Identity and Practice in Offshore University Programmes: Issues in the Internationalization of Australian Higher Education," *Teaching in Higher Education* 11, no. 2 (April 2006): 233-245.

[18]Ibid., http://www.aei.gov.au/AEI/PublicationsAndResearch/Snapshots/20090620_pdf.pdf. For more information on the economic imperative of international students in Australian HEIs, *see also,* Simon Marginson, "Trends in the Funding of Australian Higher Education," *Australian Economic Review* 34, no. 2 (2001): 205-215; G.T. Harris and F. G. Jarrett, *Educating Overseas Students in Australia: Who Benefits?* (Sydney: Allen & Unwin, 1990); Peter Karmel, "Higher Education at the Crossroads: Response to an Australian Ministerial Discussion Paper," *Higher Education* 45, no. 4 (January 2003): 1-18; Simon Marginson, "Global Position and Position-taking: the Case of Australia," *Journal of Studies in International Education* 11, no. 1 (March 2007): 5-32; G. Harman, "New Directions in Internationalizing Higher Education: Australia's Development as an Exporter of Higher Education Services," *Higher Education Policy* 17, no. 1 (2004): 101-120; and Stewart E. Fraser, "Overseas Students in Australia: Governmental Policies and Institutional Programs," *Comparative Education Review* 28, no. 2 (May 1984): 279-299.

[19]*See* David T. Gamage and Elliot Mininberg, "The Australian and American Higher Education: Key Issues of the First Decade of the 21st Century," *Higher Education*, 45 no. 2 (March 2003): 183-202; Stuart C. Carr, Darren McKay, and Robert Rugimbana, "Managing Australia's Aid- and Self-funded International Students," *International Journal of Educational Management* 13, no. 4 (1999): 167-172; Domingo Docampo, "International Comparisons in Higher Education Funding," *Higher Education in Europe* 32, no. 4 (April 2008): 369-386; and Anne-Maree Ruddy, "Internationalisation: Case Studies of two Australian and United States Universities," Ph.D. diss., Murdoch University, 2008, p. 202. Another reason to recruit international students is due to the low domestic Australian interest in science and technology fields. *See* Ghali Hassan, "Attitudes toward Science among Australian Tertiary and Secondary School Students," *Research in Science and Technological Education* 26, no. 2 (June 2008): 129-147. *See* also, Szelenyi, Katalin, "Students without Borders? Migratory Decision-making among International Graduate Students in the U.S.," *Knowledge, Technology, and Policy* 19 no. 3 (Fall 2006): 64-86.

never been more important to the survival of many HEIs in Australia.[20] Meanwhile, racial attacks[21] in Australia against students from India in recent months may have an impact on student enrollment – given that India is one of the top two sending countries to Australian HEIs.[22] The latest enrolment report from Australia Education International

[20]Not only do international students in Australia help subsidize costs for domestic students, there is recent discourse on how international students can help pay off Australia's debt. For example, *see*, "International Students Could Pay Off Australia's Debt, says Bernard Salt," *National Breaking News*, October 7, 2009. Retrieved online on October 8, 2009 at: http://www.news.com.au

[21]Despite recent racial attacks against Indian students in Australia, there are claims that these attacks have not connected with declining numbers of Indian students studying in Australia. For more on this topic, *see* "Indian Students Ditch Oz; Envoy Says Not Due to Racial Attacks," *One India News*, January 14, 2011. Retrieved online on January 15, 2011 at: http://news.oneindia.in/2011/01/14/indianstudents-ditch-oz-envoy-says-not-due-to-racialattac-aid0126.html. *See also*, "India Issues Travel Advisory for Australia," *Times Online*, January 6, 2010. Retrieved online on January 8, 2010 at: http://www.timesonline.co.uk/tol/news/world/asia/article6977296.ece. *See also*, "Indian Students Protest Against Attacks," *The Epoc Times*, June 8, 2009. Retrieved online on June 21, 2009 at: http://www.theepochtimes.com/n2/content/view/17867/; "India Students Shunning Australia," *BBC News*, January 7, 2010. Retrieved online on January 8, 2010 at: http://news.bbc.co.uk/go/pr/fr/-/2/hi/asia-pacific/8444870.stm; and "Fresh Indian Attacks in Australia," *BBC News*, January 26, 2010. Retrieved online on January 27, 2010 at: http://news.bbc.co.uk/go/pr/fr/-/2/hi/asia-pacific/8481165.stm. For an Australian perspective on racism towards international students after the events of September 11, 2001, s*ee* M. Taylor and M. Rees, "Safety, Racism and Domestic Politics influences on International Students Country Selection Behavior," in the *Chartered Institute of Marketing Australian Conference, University of Western Sydney* (August 20-22, 2003): 1-13.

[22]*See* Australian Education International (AEI), *Research Snapshot, International Student Enrolments in Higher Education in 2008*. Retrieved online on June 11, 2009 at: http://www.aei.gov.au/AEI/PublicationsAndResearch/SnaRepshots/Default.htm. For a primary document that will be used in my research, *see* Amit Menghani, Federation of Indian Students of Australia Letter to Senate Education, Employment and Workplace Relations Committee "Inquiry into the Welfare of International Students," August 16, 2009. For additional primary sources that will be used in related to recent attacks on international students from India in Australia, *see* "Universities Australia Submission to the Senate Inquiry into the Welfare of International Students" (August 2009), Canberra, ACT: Universities Australia. Attachments A: Enhancing the Student Experience and Student Safety, Universities Australia Position Paper (June 2009) B: A National Internships Scheme – Enhancing the Skills and Work-Readiness of Australian Universities graduates, Universities Australia Position Paper No. 3/08 (May 2008); and Gautam Gupta, Federation of Indian Students of Australia Letter to Senate Education, Employment and Workplace Relations Committee "Inquiry into the Welfare of International Students," August 16, 2009.

shows 89,457 students from India studied in Australia in 2009 (25.7% of total international student enrollment).[23]

Indian Students in U.S. Higher Education

In the U.S., the Institute of International Education (IIE) recently released its annual "Open Doors" report that indicates 104,897 students from India studied in U.S. (15.2% of total international student enrollment). HEI's in the 2009/2010 academic year.[24] This is a slight increase from the previous 2008/2009 academic year whereby 103,260 students from India studied in the U.S. For the first time ever, students from China surpassed Indian student enrollment in the U.S. As Indian student populations in both the U.S. and Australia are becoming stagnant compared with previous years, the importance of understanding *why* students from India select graduate institutions in Australia and the U.S. cannot be underscored enough.

Global Market Share of International Students and Fiscal Considerations

In the U.S., international students make up less than 4% of overall enrollment in HEIs.[25] However, it can be stated with certainty that the U.S. has dominated the global market share of international students in its HEIs since World War II.[26] However, there

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[23]*See* Australian Education International (AEI), *Research Snapshot.* Retrieved online on June 11, 2009 at: http://www.aei.gov.au/AEI/PublicationsAndResearch/Snapshots/Default.htm

[24]*See, Open Doors Data, International Students Leading Places of Origin,* New York: Institute of International Education. Retrieved online on December 16, 2010 at: http://www.iie.org/en/Research-and-Publications/Open-Doors/Data/International-Students/Leading-Places-of-Origin/2008-10

[25]*See* Rajika Bhandari, and Patricia Chow, *Open Doors 2008: Report on International Education Exchange.* New York: Institute of International Education. Retrieved online on September 3, 2009 at: http://opendoors.iienetwork.org/page/131554/

[26]For examples of U.S. dominance of international students since WWII and beyond, *see* G. S. Metraux, "Cross-Cultural Education Through the Ages," in David G. Scanlon, ed., *International*

is emerging evidence that suggests unequivocal global preference of pursing a higher degree in the U.S. is losing its supremacy.[27] Why, one may ask, is this important? To begin with, it is estimated that $15.543 billion was spent in the U.S. by international

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Education: A Documentary History (New York: Teachers College, Columbia University, 1960); Philip G. Altbach, "The International Student Movement," *Comparative Education Review* 8, no. 2 (October 1964): 131-137; Vivek Wadhwa et al., "America's Loss is the World's Gain: America's New Immigrant Entrepreneurs, Part IV" (Ewing Marion Kauffman Foundation, March 2009). Retrieved online on May 14, 2009 at: http://ssrn.com/abstract=1348616; Vinod B. Agarwal and Donald R. Winkler, "Migration of Foreign Students to the United States," *The Journal of Higher Education* 56 no. 5 (1985): 509-522; Christopher Simpson (Ed.), *Universities and Empire: Money and Politics in the Social Sciences during the Cold War* (New York: New Press, 1998); Hugh Davis Graham and Nancy Diamond, *The Rise of American Research Universities: Elites and Challengers in the Postwar Era* (Baltimore: Johns Hopkins University Press, 1997). For additional scholarly work on international students in the U.S. and United Kingdom, *see* Chris Bolsmann and Henry Miller, "International Student Recruitment to Universities in England: Discourse, Rationales, and Globalisation," *Globalisation, Societies and Education* 6, no. 1 (February 2008): 75-89; and Martin Trow, "Comparative Perspectives on British and American Higher Education," in *The European and American University Since 1800*, edited by Sheldon Rothblatt and Björn Wittrock (New York: Cambridge University Press, 1993): 280-299.

[27]Douglas and Edelstein, 3. *See also*, Philip G. Altbach and Patti McGill Peterson, "America in the World: Higher Education and the Global Marketplace," *International Perspectives on Education and Society* 9, no. 1 (June 2008): 313-335; Philip G. Altbach, "Impact and Adjustment: Foreign Students in Comparative Perspective," *Higher Education* 21, no. 3 (April 1991): 305-323; Philip G. Altbach, "Higher Education Crosses Borders," *Change* 36, no. 2 (2004): 18-24; K. H. Lee and J. P. Tan, "The International Flow of Third Level Lesser Developed Country Students to Developed Countries: Determinants and Implications," *Higher Education* 13, no. 6 (1984): 7-21; B. Alberts, W. A. Wulf, and H. Fineberg, "International Access to American Higher Education." *Academe* 89, no. 5 (2003): 47-53; David Pick, "The Re-Framing of Australian Higher Education," *Higher Education Quarterly* 60, no. 3 (2006): 229-241; Simon Marginson, "The Phenomenal Rise of International Degrees Down Under," *Change* 34, no. 3 (May 2002): 34-43; Peter Coaldrake and Lawrence Stedman, *On the Brink: Australia's Universities Confronting their Future* (St. Lucia: University of Queensland Press, 1998); Anthony R. Welch, "For Sale, by Degrees: Overseas Students and the Commodification of Higher Education in Australia and the United Kingdom," *International Review of Education* 34, no. 3 (1988): 387-395; Rajika Bhandari and Shepherd Laughlin (Eds.), *Higher Education on the Move: New Developments in Global Mobility* (New York: Institute of International Education, 2009); Arthur M. Hauptman and Young Kim, "Cost, Commitment, and Attainment in Higher Education: An International Comparison" (Boston: Jobs for the Future, May 2009): 1-25; and Kimberly Koch and Madeleine F. Green, "Sizing up the Competition: The Future of International Postsecondary Student Enrollment in the United States" (Washington, DC: Center for International Initiatives American Council on Education, September 2009). Retrieved online on September 22, 2009 at: www.acenet.edu. For press related information on this topic, *see* M. Harty, "State Department: We Don't Want to Lose Even One Student," *The Chronicle of Higher Education* (October 8, 2004): 10. D. Cohen, "Australia Has Become the Academic Destination for Much of Asia. Can It Handle the Influx?," *The Chronicle of Higher Education* 49 no. 21, (2003): A40; and O. Bain and W. K. Cummings, "Where Have the International Students Gone?," *International Educator* 14, no. 2 (2005): 18-26.

students and their families in the 2008/2009 academic year alone.[28] In Australia, international students accounted for a staggering $10.6 billion in the higher education sector.[29] In pure financial terms, international students are an enormous resource, not only for the HEIs they enroll in, but also for the fiscal contributions made to the U.S. and Australian economy overall. In relation to advanced degrees, international students in the U.S. make up nearly 30% of overall graduate student enrollment.[30] Teaching and research assistants, especially in low domestic student participatory STEM fields, rely heavily on international students to fill the technical and pedagogical void in U.S. HEIs.[31]

To reiterate, the importance of identifying the key features and characteristics of "why" international students select U.S. and Australian HEIs is central to my research

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[28]Institute of International Education, *Open Doors Report, 2008*. Retrieved online on September 3, 2009 at: http://opendoors.iienetwork.org/page/131554/

[29]*See* Australian Education International (AEI), *Export Income to Australia from Education Services in 2009-10, Australia Education International* (http://www.aei.gov.au/AEI/PublicationsAndResearch/Snapshots/Default.htm)

[30]*See* N. Bell, *Graduate Enrollment and Degrees: 1997 to 2007* (Washington, DC: Council of Graduate Schools, 2008). For more recent international graduate students in the U.S. *see* N. Bell, *Findings from the 2009 CGS International Graduate Admissions Survey Phase II: Final Applications and Initial Offers of Admission* (Washington, DC: Council of Graduate Schools, August 2009). Retrieved online on August 2, 2009 at: http://www.cgsnet.org/Default.aspx?tabid=172. *See also*, Education at a Glance 2009: OECD Indicators. Retrieved online on September 18, 2009 at: http://www.oecd.org/document/24/0,3343,en_2649_39263238_43586328_1_1_1_1,00.html.

[31]*See* National Science Foundation's report on, "An Emerging and Critical Problem of the Science and Engineering Labor Force," *A Companion to Science and Engineering Indicators 2004* (Washington, DC: The National Science Board, January 2004). *See also*, R. B. Freeman, "Does Globalization of the Scientific/Engineering Workforce Threaten U.S. Economic Leadership?," Paper delivered at Innovation Policy and the Economy Conference, April 19, 2005, Washington, DC; Phillip A. Griffiths et al., *The Opportunity Equation Transforming Mathematics and Science Education for Citizenship and the Global Economy* (New York: Carnegie Corporation of New York and Institute of Advanced Studies, 2009); Xianglei Chen and Thomas Weko, "Students Who Study Science, Technology, Engineering, and Mathematics (STEM) in Postsecondary Education" (Washington DC: National Center for Educational Statistics, July 2009); and N. N Kellam, M. A. Maher, and W. H. Peters, "The Faculty Perspective on Holistic and Systems Thinking in American and Australian Mechanical Engineering Programmes," *European Journal of Engineering Education* 33, no. 1 (March 2008): 45-59.

and thus adds to the depth of scholarly literature in the field of comparative and international education. By conceptualizing the international issue of higher education "choice," this study will undoubtedly add to the breadth of knowledge in the field of comparative and international education. The following chapter, entitled, "Literature Review," will examine past and current scholarly literature that frames the current research on decision-making in higher education.

CHAPTER TWO

LITERATURE REVIEW

The paucity of research related to graduate students from India and their decision-making processes presents a challenge as well as an opportunity for the researcher. One major challenge is locating scholarly literature that is similar in scope to my own research. While analogous research to my own does not exist, I will extrapolate and highlight sections of previous and current research that relates to my dissertation topic and scope. To be sure, there is an opportunity to address the gap in scholarship related to decision-making processes through the addition and focus on choice and selection in international engineering graduate programs and students from India. The following sections of the literature review are categorized thematically related to topics that involve choice and selection in higher education.

General Background

The U.S. is often looked at as *the* destination for higher education.[1] The "land of opportunity" is still an associated term for living, studying, and working in the U.S. Prospective international undergraduate and graduate students are attracted to U.S. higher

[1]For examples of scholarly literature on U.S. higher education and its global dominance, *see* Peter MacKenzie, "School Choice in an International Context," *Journal of Research in International Education* 9, no. 2 (August 2010): 107-123; T. Galama and J. Hosek, *U.S. Competitiveness in Science and Technology* (Santa Monica: RAND Corporation, 2008); and P.G. Altbach, "One-Third of the Globe: The Future of Higher Education in China and India," *Prospects* 39, no. 1 (March 2009): 11-31.

education, which attracts the "best" students from abroad.[2] In a recent research project by the American Council on Education, Kimberly Koch and Madeleine F. Green challenge the notion that the U.S. is still the dominant leader in the global market of higher education. Koch and Green argue that "[t]he landscape of international student enrollments is shifting, and the preeminence of the United States as a destination for these students could be at risk."[3] In making their arguments, Koch and Green reference enrollment trends in the U.S., United Kingdom, Germany, France, and Australia to support their claims.[4] Similarly, Wadhwa et al. in their article entitled, "America's Loss is the World's Gain: America's New Immigrant Entrepreneurs, Part IV," examine the role of graduate education and subsequent employment opportunities for graduates from China and India specifically.[5] Whereas Koch and Green are more concerned with the

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[2]For a recent study on international students decision-making to attend community colleges in the U.S., *see* Eric Bohman, "Headed for the Heartland: Decision making process of Community College bound International Students," *Community College Journal of Research and Practice* 34 no. 1-2 (January 2010): 64-77.

[3]Kimberly Koch and Madeleine F. Green, "Sizing up the Competition: The Future of International Postsecondary Student Enrollment in the United States" (Washington, DC: Center for International Initiatives American Council on Education, September 2009), p. 2. Retrieved online on September 22, 2009 at: www.acenet.edu. *See* also, S. Ahmad, "International Student Expectations, the Voice of Indian students," in *It's About the Students: The Australian International Education Conference 2006* (Sydney: IDP Education, 2006). Retrieved on December 11, 2010 at: http://www.aiec.idp.com/past_papers/2006.aspx

[4]For a recent examination of Germany's higher education reform, *see* David Baker, Helmut Köhler and Manfred Stock, "Socialist Ideology and the Contraction of Higher Education: Institutional Consequences of State Manpower and Education Planning in the Former East Germany," *Comparative Education Review* 51, no. 3 (August 2007): 353-377.

[5]Vivek Wadhwa et al., "America's Loss is the World's Gain: America's New Immigrant Entrepreneurs, Part IV," March 2009. Retrieved online on May 14, 2009 at: http://ssrn.com/abstract=1348616. *See also,* Lewis E. Kraus et al., "A Study of Four Federal Graduate Fellowship Programs Education and Employment Outcomes" (U.S. Department of Education Office of Planning, Evaluation and Policy Development Policy and Program Studies Service, September, 2008).

future of international student enrollment in U.S. HEIs, Wadhwa et al. focus their attention on post-graduation entrepreneurial activities of students from China and India.[6]

Global Higher Education

In another recent scholarly paper entitled, "[t]he Global Competition for Talent: The Rapidly Changing Market for International Students and the Need for a Strategic Approach in the U.S.," the issue of emerging markets in the global playing field of higher education is considered.[7] John Aubrey Douglass and Richard Edelstein cite a number of reasons "why" students are going places other than the U.S. by claiming, "new competitors for international students are emerging outside the U.S."[8] Douglass and Edelstein attribute the shift in the global market of higher education to the success of nations within the European Union, as well as Australia, Canada, New Zealand, and Japan.[9] Additionally, there is a recent work that examines international higher education

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[6]For a scholarly piece on work-related experiences of international students, *see* Maureen Andrade and Norman W. Evans (Eds.), *International Students: Strengthening a Critical Resource* (Rowman & Littlefield and the American Council on Education, 2009). For additional scholarly works on the global market of higher education, *see* Anneliese Dodds, "How Does Globalisation Interact with Higher Education? The Continuing Lack of Consensus," *Comparative Education* 44, no. 4 (December 2008): 505-517; Simon Marginson, "Global Field and Global Imagining: Bourdieu and Worldwide Higher Education," *British Journal of Sociology of Education* 29, no. 3 (December 2008): 303-315; and P.G. Altbach and U. Teichler, "Internationalization and Exchanges in a Globalized University," *Journal of Studies in International Education* 5, no. 1 (2001): 5-25.

[7]John Aubrey Douglass and Richard Edelstein, "The Global Competition for Talent: The Rapidly Changing Market for International Students and the Need for a Strategic Approach in the U.S.," *Center for Studies in Higher Education, University of California, Berkeley* 8, no. 9 (October 2009): 1-22.

[8]Ibid., 4.

[9]Ibid., pp. 3-8. Douglass and Edelstein view European nations – as a collective whole – as the emerging leader in the global market of higher education. While this view is somewhat contended, it provides an interesting interpretation of global student mobility and expanding systems of higher education. For other European perspectives on the global market of higher education, *see* Miguel Portela, Carla Sa, Fernndo Alexandre, and Ana Cardoso, "Perceptions of the Bologna Process: What Do Students' Choices Reveal?," *Higher Education* 57, no. 10 (October 2009): 465-474; Annamaria Silvana De Rosa, "New Forms of International Cooperation in Doctoral Training: Internationalisation and the International

in Australia and New Zealand in the context of teacher migration to and from the Pacific Rim.[10] In conclusion to their economic analysis of international students in the U.S. and elsewhere, Douglass and Edelstein prescribe a set of recommendations for U.S. federal and state policymakers.[11]

International School Choice

To be sure, there is a scarcity of empirical evidence concerning the decision-making process of international students when selecting HEIs abroad.[12] However, there

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Doctorate-One Goal, Two Distinct Models," *Higher Education in Europe* 33, no. 1 (August 2008): 3-25. For a recent Canadian account of recruiting international students from India, *see Recruiting International Students in India: A Good Practices Guidebook* (Association of Universities and Colleges of Canada, Ottawa, 2010). *See, also* Kevin Kinser and Madeleine F. Green, "The Power of Partnerships: A Transatlantic Dialogue" (Washington, DC: American Council on Education, March 2009); Rick Trainor and John Sexton, "Higher Education and Collaboration in Global Context: Building a Global Civil Society" (UK/US Study Group, July 2009); and U. Teichler, "Internationalisation of Higher Education: European Experiences," *Asian Pacific Education Review* 10 (2009): 93-106.

[10]For example, *see* Robyn Iredale, Carmen Voigt-Graf, and Siew-Ean Khoo, "Teacher Migration To and From Australia and New Zealand, and the Place of Cook Islands, Fiji, and Vanuatu Teachers," *Research in Comparative and International Education* 4, no. 2 (May 2009): 125-140.

[11]In addition to their national recommendations on U.S. policies that may increase the number of international students in HEIs, Douglass and Edelstein also prescribe a set of institutional goals and policies, 18-19. For additional economic analyses involving international students, *see* Martin Haigh, "Internationalisation, Planetary Citizenship, and Higher Education Inc.," *Compare: Journal of Comparative Education* 38, no. 4 (August 2008): 427-440; Elizabeth Cassity, "Cast the New a Little Wider: Australian Aid in the South Pacific," *International Journal of Educational Development* 28, no. 3 (May 2008): 246-258; and Mary E. McMahon, "Higher Education in a World Market: An Historical Look at the Global Context of International Study," *Higher Education* 24, no. 4 (1992): 465-482. For Douglass' most recent work on the impact of the global recession on higher education institutions around the world, *see* J.A. Douglass, "Higher Education Budgets and the Global Recession – Tracking Varied National Responses and Their Consequences," *Center for Studies in Higher Education, University of California, Berkeley Research & Occasional Paper Series*: 4.10 (February 2010): 1-26.

[12]For a critical analysis of the politics of power in decision making, *see* Dietrich Goldschmidt. "Power and Decision Making in Higher Education," *Comparative Education Review* 22 no. 2 (June 1978): 212-241. For a look at assessment in higher education decision making, *see* John C. Ory, "A Role for Assessment in Higher Education Decision Making," *New Directions for Higher Education* 67 no.7 (1989): 71-87.

is an emerging body of literature on the topic of international school choice.[13] For example, Kaye Eldrige examines the cultural differences in Thai student decision-making of those pursuing higher education in Australia.[14] Eldrige moves away from the traditional model of conceptualizing international education as an experience outside of one's home country. Instead, Eldrige hones in on the decision-making process of administrators involved in transnational higher education.[15] Eldrige's conception of the decision-making process is broken down into three factors: "the relevant *fact*s; any necessary judgments about factual information which is unavailable at a particular time; and finally, the decision-makers values."[16] In her research, Eldrige conducted eleven interviews with Thai and Australian higher education administrators and on the basis of this data developed an argument about the importance of cultural differences in decision-making.

In another recent scholarly work also closely related to Australia and higher education decision-making, Terry Gatfield and Stephen Larmar's article entitled, "How Singaporean Students Decide to Study in Australia: Towards Building a Model of Their

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[13]Here, I define international school choice as post secondary degree-seeking students holding citizenship from outside the host country decision-making processes. For two recent works on the topic of secondary education and international school choice, *see* Rajashri Chakrabarti and Paul E. Peterson (eds.), *School Choice International: Exploring Public-Private Partnerships* (Cambridge: MIT Press, 2009), and Martin Forsey, Scott Davies, and Geoffrey Walford (eds.), *The Globalisation of School Choice?* (Oxford: Symposium Books, 2008).

[14]Kaye Eldrige, "Australia's Provision of Higher Education in Thailand: A Case-Study of Possible Cultural Differences in Decision-making," in *Southeast Asian Ministers of Education Organization Education Agenda*, 4 (Bangkok: Amarin Printing & Publishing PCL, March 2009): 24-27.

[15]Transnational higher education can be considered a new form of international education in that Thai students can receive an "Australian" education by never leaving Thailand. These Australian branch campuses often work very closely with local Thai universities. *See* Eldrige, 24.

[16]Ibid., 24. Emphasis added.

Decision-Making" examines the role of Asian student decision-making. Gatfield and Larmar are interested in the behavioral patterns of students from Singapore who select Australian higher education institutions and attempt to construct a model for decision-making.[17] In 2006, Gatfield and Cheh examined decision making in Australia, Taiwan, the U.K. and the U.S. through the use of Martin Fishbein and Icek Ajzen's multi-attribute Theory of Planned Behavior model.[18] Gatfield and Cheh provide a unique analysis of the Chinese diaspora through the lens on Taiwanese that select undergraduate studies in three countries; Australia, the U.K. and the U.S., respectively.

Despite the fact that my research does not focus on students from Taiwan, Thailand or Singapore, the work these scholars have done to theorize and conceptualize the decision-making processes of students and administrators alike is useful to my study. It provides a framework for how various student populations in various countries encounter the decision-making process for undergraduate and/or graduate higher

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[17]Terry Gatfield and Stephen Larmar, "How Singaporean Students Decide to Study in Australia: Towards Building a Model of Their Decision-Making," *Research in Comparative and International Education* 3, no. 4 (December 2008): 378-393. *See, also* Satoshi Sugahara, Gregory Boland, and Andrea Cilloni. "Factors Influencing Students' Choice of an Accounting Major in Australia," *Accounting Education International Journal* 17, no. 1 (October 2008): 37-54; M. Choi. "Korean Students in Australian Universities: Intercultural Issues," *Higher Education Research & Development* 16 (1997): 263-280; Kevin M. Dunn and David Ip, "Putting Transnationalism in Context: Comparing Hong Kong Chinese-Australians in Sydney and Brisbane," *Australian Geographer* 39, no. 1 (February 2008): 81-99; Kanishka Jayasuriya, "From British Subjects to Australian Values: A Citizenship-Building Approach to Australia-Asia Relations," *Contemporary Politics* 14, no. 4 (December 2008): 479-95; Pauline Taylor, "International Japanese Students: Their Expectations and Learning Needs at Australian Universities," Ph.D. diss., University of Technology, Sydney (December 2008); and Deborah Henderson, "Politics and Policy-Making for Asia Literacy: The Rudd Report and a National Strategy in Australian Education," *Asian Studies Review* 32, no. 2 (June 2008): 171-195.

[18]*See* Terry Gatfield and C-h. Chen, "Measuring student choice criteria using the Theory of Planned Behaviour: The Case of Taiwan, Australia, UK, and USA," *Journal of Marketing for Higher Education* 16, no.1 (2006): 77-95. For a closer look at Fishbein and Ajzen's, "Theory of Planned Behavior," and its foundations in the field of psychology, *see* Martin Fishbein and Icek Ajzen, "Theory-based Behavior Change Interventions: Comments on Hobbis and Sutton," *Journal of Health and Psychology* 10 (2005): 27-31.

education experiences. Similar to the theme of international choice, but not as related, Mark H. Salisbury et al. examine why students decide to study abroad, but from a more general point of view and not specific to students from India nor to degree-seeking graduate students.[19] There are quite a few reports that highlight recent trends in international student mobility that include information on STEM students. In citing these examples, I will draw descriptive information from these reports and highlight students from India specifically and their recent enrollment trends. For example, reports on international higher education from OECD, UNESCO, IIE, and AEI contain primary data on enrollment trends specific to major, country of origin, and host institution.[20] Additionally, there is an ample amount of research on students from India, higher education international mobility, and the field of engineering. However, most of the

[19]Mark H. Salisbury et al., "Going Global: Understanding the Choice Process of the Intent to Study Abroad," *Research in Higher Education* 50 (2009): 119-143. For additional works on decision-making and education, *see* Maribel Blasco, "Linking Rights with Lives: The Micropolitics of Educational Decision Making in Urban Mexico," *Comparative Education Review* 53, no. 1 (February 2009): 41-61; D. Hossler and K.S. Gallagher, "Studying College Choice: A Three-phase Model and the Implications for Policy-makers," *College and University* 2 (1987): 207-221; M.B. Paulsen and E.P. St. John, "Social Class and College Costs: Examining the Financial Nexus between College Choice and Persistence," *The Journal of Higher Education* 73, no. 2 (2002): 189-239; L.W. Perna, "Studying College Access and Choice: A Proposed Conceptual Model," in J.C. Smart (Ed.), *Higher Education: Handbook of Theory and Research* (New York: Springer Press, 2006): 99-157; and P. McDonough, *Choosing Colleges: How Social Class and Schools Structure Opportunity* (Albany: SUNY Press, 1997). For additional research on higher education in the U.S. and student college decision-making, *see* D. Hossler, J. Schmit, and N. Vesper, *Going to College: How Social, Economic, and Educational Factors Influence the Decisions That Students Make* (Baltimore: John Hopkins University Press, 1999); M.S. McPherson and M.O. Schapiro, *The Student Aid Game: Meeting Need and Rewarding Talent in American Higher Education* (Princeton: Princeton University Press, 1998); P. Sacks, *Tearing Down the Gates: Confronting the Class Divide in American Education* (Berkeley: University of California Press, 2007); and J. Steinberg, *The Gatekeepers: Inside the Admissions Process of a Premier College* (New York: Penguin Books, 2002).

[20]*See* Education at a Glance 2009: OECD Indicators. Retrieved online on September 18, 2009 at: http://www.oecd.org/document/24/0,3343,en_2649_39263238_43586328_1_1_1_1,00.html; UNESCO. (2009). Global Education Digest. Retrieved online on September 18, 2009 at: www.uis.unesco.org/publications/GED2009; IIE Open Doors Report (2008). Retrieved online on September 18, 2009 at: http://opendoors.iienetwork.org/; and Australian Education International (AEI), *Research Snapshot*. Retrieved online on September 18, 2009 at: http://www.aei.gov.au/AEI/PublicationsAndResearch/Snapshots/Default.htm

literature on students from India offers a limited perspective on engineering students and their choice of location and institution when selecting a graduate program overseas.[21]

According to a recent publication by the Canadian government, "education agents" based in India have an influence on students decision-making process. In the report, it is stated that:

> Responses varied significantly amongst surveyed institutions. Some institutions, as a matter of university policy, do not work with education agents. Some such as Memorial and Simon Fraser have engaged agents over the years with satisfactory results. The CUAC, which some schools work with, has a policy of not working with education agents. There is a high potential for fraud in India and the reputation of education agents in India is decidedly mixed. However education agents are part of the marketing landscape in India and many institutions have elected to engage in a commercial relationship.[22]

Whether or not particular institutions in North America (or anywhere in the world for that matter) support activities of these in-country recruitment agents is certainly decided on an institutional basis. In the current debate on whether or not these agents are "ethical,"

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[21]For a handful of works on India, education, and engineering in general, *see* Wadhwa et al., "Where the Engineers Are," *Issues in Science and Technology* (Spring 2007); Wardlow Friesen, "The Evolution of 'Indian' Identity and Transnationalism in New Zealand," *Australian Geographer* 39, no. 1 (February 2008): 45-63; Chandra Pal Singh Chauhan, "Education and Caste in India," *Asia-Pacific Journal of Education* 28, no. 3 (August 2008): 217-234; Smitha Radhakrishnan, "Examining the 'Global' Indian Middle Class: Gender and Culture in the Silicon Valley/Bangalore Circuit," *Journal of Intercultural Studies* 29, no. 1 (January 2008): 7-21; Amita Chudgar and Vyjayanthi Sankar, "The Relationship Between Teacher Gender and Student Achievement: Evidence from Five Indian States," *Compare* 38, no. 5 (November 2008): 627-642; T.W. Mazzarol, S. Choo, and V.S. Nair, "Australia and the Indian Postgraduate Science and Technology Market: Examining Why Indian Students Choose to Study in Countries Other Than Australia," *Australian Education International, Department of Education, Training and Youth Affairs* (Canberra: Commonwealth of Australia, 2001a); and Bani Bhattacharya, "Engineering Education in India: The Role of ICT," *Innovation in Education and Teaching International* 45, no. 2 (June 2008): 93-101; Mary Ann Maslak and Gayatri Singhal, "The Identity of Educated Women in India: Confluence or Divergence?," *Gender and Education* 20, no. 5 (September 2008): 481-493; and Reehana R. Raza, "New Evidence on Outcomes from South Asian Distance Education Tertiary Institutions: Some Implications for Future Policy," *Compare* 38, no. 4 (August 2008): 483-500. For a scholarly piece on engineering in China, *see* Kuangdi Xu, "Engineering Education and Technology in a Fast-Developing China," *Technology in Society* 30, no. 3 (August 2008): 265-274.

[22]*See Recruiting International Students in India: A Good Practices Guidebook*, p. 10.

Philip Altbach and Mitch Leventhal provide interesting perspectives in the ongoing discourse surrounding this sensitive issue.[23] To be sure, there is considerable disagreement as to whether or not agents should be eliminated or kept depending on the institutional perspective.

Reputation and Rankings

One very important component in the race to attract international students to a particular HEI is reputation. There are many indicators for the "best" universities throughout the world.[24] To be sure, the reputation of a particular field of study coincides with how institutions are ranked nationally and perhaps more importantly, internationally. The reputation of an HEI – as perceived through various international rankings – can have a critical impact on students' choice and selection of an institution abroad. The methodology employed in these measurements of HEI ranking is not at the forefront of

[23]*See* Sarah Cunnane, "American Recruitment Body Rejects 'Naive' Calls to 'Eliminate' the Agents," *Times Higher Education*. Retrieved online on January 21, 2011 at: http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=414906&c=1

[24]For a national example of university rankings, *see* U.S. News and World Report. Retrieved online on January 22, 2011 at: http://colleges.usnews.rankingsandreviews.com/best-colleges. For an international example, *see* The Times Higher Education QS Supplement. Retrieved online on January 22, 2011 at: http://www.topuniversities.com/university-rankings.

the decision-making process.[25] Rather, students and sometimes parents factor in the reputation of an HEI to help in their selection process.[26]

An interesting point worth mentioning is the conceptualization of "push/pull" factors in decision-making and the theme of reputation. In terms of pull factors influencing choice, the reputation of an HEI can certainly be indicated as such. However, in addition to considering reputation as a pull factor, it can also have a push element as well. For example, with respect to HEIs in India there are only so many "reputable" institutions that a student may be able to consider attending.[27] Competition within one's home country for limited seats can be viewed as a relevant factor for "pushing" students from India overseas to pursue graduate degrees in engineering.[28] For instance, due to the large application pool for any of the Indian Institutes of Technology, there are only so

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[25]For scholarly works on differing perspectives of university rankings, *see* Patti McGill Peterson et al., "Impact of College Rankings on Institutional Decision Making: Four Country Case Studies," *Institute for Higher Education Policy* (Washington, DC: Lumina Foundation for Education, 2009): 1-28; Ross Williams, "Ranking Australian Universities: Controlling for Scope," *Higher Education in Europe* 33, no. 2 (October 2008): 331-344; Ross Williams and Nina Van Dyke, "Reputation and Reality: Ranking Major Disciplines in Australian Universities," *Higher Education* 56, no. 1 (February 2008): 1-28; and M. Clark, "The Impact of Higher Education Rankings on Student Access, Choice, and Opportunity," in *College and University Ranking Systems: Global Perspectives and American Challenges* (Washington, DC: Institute for Higher Education Policy, 2007).

[26]Some students rely of various forms of ranking systems of graduate programs and institutions. *See* Mazzarol, 84.

[27]For an excellent example of the "push" effect of perceived low quality home institutions, *see* Anna Robinson-Pant, "Changing Academies: Exploring International PhD Students' Perspectives on 'Host' and 'Home' Universities," *Higher Education Research and Development* 28, no. 4 (July 2009): 417-429. *See* also, S. Karunes, "Management Training of Engineering Students at the Indian Institute of Technology, Delhi," *European Journal of Engineering Education* 13, no. 4 (January, 1988): 399-409.

[28]For a look the impact of university teaching shortages in India, *see* Shailaja Neelakantan, "In India, Economic Success Leaves Universities Desperate for Professors," *Chronicle of Higher Education*, October 12, 2007. Retrieved online October 23, 2007 at: http://chronicle.com/article/In-India-Economic-Success/32566/. For a brief overview of one effort being made by India to fix engineering programs, *see* Shailaja Neelakantan, "India Shores Up Standards in Weak Engineering Programs," *Chronicle of Higher Education*, August 19, 2008. Retrieved online on August 27, 2008 at: http://chronicle.com/article/India-Strengthens-Its/1072.

many students that can be accommodated. More specifically, there are 15 total affiliated universities with the Indian Institutes of Technologies. It is extremely difficult to gain entrance into these schools.[29] As such, students wishing to pursue a degree at a "reputable" graduate institution in India far exceed the supply of HEIs available.[30] In this way reputation will be conceptualized as a push *and* pull factor. To be sure, the "reputation" of an HEI plays a key role in the choice and selection process of the internationally mobile graduate student.

"Quality" of Education

In addition to the rankings of HEI's overall, there are also "quality" indicators for specific fields of study. In the technology fields, quantifying the overall reputation of the institution is only part of the ranking status. Individual departments in subfields such as engineering and computer science can be considered important factors in the decision-making process of students from India. For example, Mahapatra and Khan in their recent study examine "quality" standards in engineering education.[31] Similarly, Patricia

[29]For more on the competitiveness of India's IIT's, *see* the Indian Institute of Technology, Delhi admissions "Frequently Asked Questions." Retrieved online on December 4, 2010 at: http://tnp.iitd.ac.in/pgadmission/

[30]To be sure, there are other factors other than reputation that influence students to go abroad for a graduate education.

[31]*See* S. S. Mahapatra and M.S. Khan, "A Framework for Analysing Quality in Education Settings," *European Journal of Engineering Education* 32, no. 2 (May 2007): 205-217. For a detailed look at biochemical education in an Indian state, *see* V. H. Mulimani, "Biochemical Education in Gulbarga, Karnataka State, India," *Biochemical Education* 19, no. 1 (January 1, 1991): 26-28.

Cretchley uses Australian higher education as her lens when approaching the outcomes of teaching and learning.[32]

The way in which various international rankings have portrayed the reputation of institutions around the world is concerning. Philip Altbach recently addressed the ongoing debate regarding the methodologies employed by various ranking institutions in *Inside Higher Education*.[33] Altbach argues, "the most influential and most widely criticized general ranking is the U.S. News and World Report America's Best College Ranking, now in its seventeenth year."[34] The popularity of international rankings found in U.S. News and World Report is an important factor that often times leads to final choice and selection of institutions for students overseas.[35] Altbach goes on to state, "railing against the rankings will not make them go away; competition, the need to benchmark, and indeed the inevitable logic of globalization make them a lasting part of the academic landscape of the 21st century."[36] As competition for international students escalates so too will the international HEI ranking debate.

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[32]*See* Patricia Cretchley, "Are Australian Universities Promoting Learning and Teaching Activity Effectively? An Assessment of the Effects on Science and Engineering Academics," *International Journal of Mathematical Education in Science and Technology* 40, no. 7 (2009): 865-875.

[33]*See* Philip G. Altbach, "The State of the Rankings," *Inside Higher Education*, November 11, 2010. Retrieved online on November 19, 2010 at: http://www.insidehighered.com/views/2010/11/11/altbach

[34]Ibid.

[35]For a work that examines the influence of reputation and rankings in international higher education, *see* J. L. Stoecker, "Factors Influencing the Decision to return to Graduate School for Professional Students," *Research in Higher Education* 32, no. 6 (1991): 689-701.

[36]Ibid.

There have been several large-scale studies that attribute perceived reputation as one of the primary factors for international students to select HEIs abroad. The Australian-based company IDP Education Pty Ltd (IDP) continues to produce annual reports that measure student's decision-making.[37] Most recently, Rob Lawrence revealed data from the 2009/2010 academic year that examined Ph.D. students' decision-making factors to study in Australia.[38] Lawrence states, that "opportunity to undertake research at a high ranked university" was the most important factor in students' decision-making.[39] Furthermore, "[wanting] to be supervised by a particular academic / researcher" was the second most popular response for students seeking doctoral degrees in Australia.[40] This is not surprising given the narrow scope that Ph.D. programs offer their students and the close work proximity students will have with their respective faculty advisor.

The British Council recently conducted a large-scale longitudinal study on decision making in higher education that examined 115,000 prospective student perspectives over a period of three and a half years.[41] Due to the fact that this study was

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[37]For example, *see* the IDP's Research Services branch. Retrieved online on November 8, 2010 at: http://www.idp.com/research/main.aspx

[38]*See* Rob Lawrence, "Futurecasting International Students in Australia: Scenarios for the Future," *Australian International Education Conference*, October 14, 2010, Sydney, New South Wales, Australia. Retrieved online on November 20, 2010 at: http://www.aiec.idp.com/pdf/2010_Lawrence_Thu_1210_BAudB.pdf

[39]Ibid., 1.

[40]Ibid.

[41]*See* John Morgan, "What Motivates International Students?," *Inside Higher Education*, September 30, 2010. Retrieved online on October 2, 2010 at: http://www.insidehighered.com/layout/set/print/news/2010/09/30/foreign. The researcher contacted the British Council in order to gain access to the study, but was informed that, "the student decision making data that we have is currently only available to U.K. education institutions who are members of the

not made public, John Morgan of *Times Higher Education* summarized that, "students head to Britain for quality, to the United States for career improvement and to Germany for low tuition."[42] Morgan provides the following synopsis of the three and a half year project by stating:

> prospective students aiming to study in the U.S. were most likely to focus on enhancing their career prospects (38 percent). Those with their eyes on Australia or Canada were more inclined than others to see the opportunity to work while studying as a key consideration (24 percent).[43]

In the British Council study, it is noteworthy to point out that "career prospects" were centered on the U.S. as a location of interest. Meanwhile, students considering Australia for higher education did so with the intention of working while pursuing a degree. Additionally, the United Kingdom was considered the top destination among prospective students because of "quality education."[44] Furthermore, according to Morgan, "the survey found that when asked to identify three factors that most influenced their initial decision to study abroad – before choice of destination – higher quality is cited by 54.2 percent, followed by career improvement (53.8 percent) and the chance to live overseas (51.5 per cent)."[45] By administering the large-scale survey to prospective international students, the researchers at the British Council provide insight into the minds of

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Education U.K. Partnership." Personal email correspondence on December, 15, 2010 with Michael Peak, Education Market Intelligence Manager, British Council.

[42]*See* Morgan.

[43]Ibid.

[44]For a look at African students' decision making, *see* Felix Maringe and S. Carter, "International Students' Motivations for Studying in UK HE: Insights into the Choice and Decision Making of African Students," *International Journal of Educational Management* 21 no. 6-7 (2007): 459-475.

[45]Ibid.

prospective international students and how they perceive the decision-making process. Notwithstanding the interdisciplinary nature of an undergraduate liberal arts education, graduate education is designed to propel students into a particular career.[46] Therefore, at the graduate level, it is reasonable to assume international students are arriving on U.S. and Australian campuses in anticipation for career and employment opportunities.[47]

Work-related Opportunities

In the U.S., international students have been historically drawn to its HEIs with large impetus on the reputation of its institutions. Additional pull factors include scholarship monies and the anticipated U.S. job market upon time of graduation (to name a few).[48] The recent economic downturn and global recession may placate the extent to which students from India select a U.S. institution to fulfill their work-related desires.[49] Another recent factor that influenced whether or not an international student pursues a graduate degree in the U.S. involves the issue of obtaining a study visa.[50] To be sure,

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[46]For an interesting look at undergraduate education in India, *see* Peter Ninnes, Claire Aitchison, and Shoba Kalos, "Challenges to Stereotypes of International Students' Prior Educational Experience: Undergraduate Education in India," *Higher Education Research and Development* 18, no. 3 (October 1999): 323-342.

[47]For a look at career choices of management students from India, *see* Tanuja Agarwala, "Factors Influencing Career Choice of Management Students in India," *Career Development International* 13 no. 4 (January 2008): 362-376.

[48]Employment opportunities in the U.S. look very favorable to prospective graduate students. For a recent scholarly work in the area of higher education and the emerging knowledge economy, *see* Gürüz, 2008. In the Australian context, *see* Mazzarol and Soutar, 83. There are many additional pull factors. For example, cost issues, environment, and geographic proximity are a few additional pull factors.

[49] For an in-depth analysis and discussion on this topic, *see* Rakesh Grupta, "Leveraging Indian Talent Pool and Demographics to Build Competitive Advantage," *Education, Knowledge, and Economy* 3, no. 3 (December 2009): 213-229.

[50]*See* Government Accountability Office, *Global Competitiveness: Implications for the Nation's Higher Education System,* GAO-07-135SP, January 2007; and Adrian Arroyo, "The USA Patriot Act and the Enhanced Border Security and Visa Entry Reform Act: Negatively Impacting Academic Institutions by

visas are an important issue when prospective students consider attending an institution in the U.S., not only for studies, but also for work-related visas (i.e., H1B work visa).[51] Simply because an international student has been given admission into a particular university does not automatically equate to that student obtaining a U.S. visa. While the U.S. has streamlined student visa processing in recent years, the time period and federal policies implemented after the events of September 11, 2001 undoubtedly had an impact on international student enrollment in U.S. HEIs.[52] On this topic, a dean at a university in France remarked,

> For the citizens of the world, I think the George W. Bush years were very painful years… but as a selfish dean, I was very happy to see how many people who were pushed out of the U.S. came here instead. The more the United States was shutting the doors, the more the free world was going elsewhere.[53]

Deterring Foreign Students from Studying in the United States," *Transnational Lawyer* 16, 411 (2003): 1-28. *See, also* M. Puzo, "U.S. Hustles to Improve Visa Process," Associated Press story reported in Newsday.com, February 7, 2005; J. Selingo, "Foreign-Student Applications Decline in U.S.," *The Chronicle of Higher Education* 50, no. 26 (2004): 21; and J. Margulies, "Delays in Visa Approvals Cause Headaches for Colleges," *The Chronicle of Higher Education* 49 no. 4, (2002): 24.

[51]*See* M.J. Censer, "Visa Problems May Damage U.S. Science, Groups Warn," *Academe* 90, no. 5 (2004): 6-7; P. Fine, "Canada Cashes in as US Toughens Up Visa Policies," *The Times Higher Education Supplement* 16, no. 24 (January 2004): 14; and J. Marcus, "US Visa Rules put off International Students," *The Times Higher Education Supplement* 16, no. 56 (2004): 12.

[52]For more information on international student visa policies created after 9/11, *see* S. Yale-Loehr, D. Papademetriou, and B. Cooper, *Secure Borders, Open Doors: Visa Procedures in the Post September 11 Era* (Washington, DC: Migration Policy Institute, 2005).

[53]*See* Katherine Mangan, "Global Focus Draws Students to Europe for Business," *Chronicle of Higher Education*, September 26, 2010. Retrieved online on September 29, 2010 at: http://chronicle.com/article/European-Business-Schools-Pull/124599/

As a result, the U.S. may be witnessing the ripple effects of post-9/11 visa policies that equate to low international student enrollments and applications for future semesters.[54]

Another study that examined the perceptions of Indian students and coming to the U.S. for studies was conducted by the U.S.-based Institute of International Education (IIE).[55] Chow and Putney conclude that,

> the U.S. is perceived to have the highest quality higher education system and widest range of schools and programs compared to the United Kingdom, Australia, Continental Europe, Southeast/East Asia and the Middle East, as well as being a safe place to study which welcomes international students, and offers a good lifestyle, good student support services and many scholarship[s] opportunities.[56]

Clearly, the perceived quality of education has an impact on where students from India wish to select an HEI abroad; however, work-related opportunities are an important consideration as well. Chow and Putney go on to claim that students from India select the U.S. for higher education in order to "prepar[e] for a future career in a foreign country."[57] Along the same lines of work-related opportunities, Wadhwa et al. argue that work opportunities in the country of study are important, yet work opportunities in India are perceived to be equally as important.[58]

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[54]*See* S. Yale-Loehr et al. *See also,* N. Bell, "Findings from the 2010 CGS International Graduate Admissions Survey Phase III: Final Offers of Admission and Enrollment" (Washington, DC: Council of Graduate Schools, November 2010). Retrieved online on November 10, 2010 at: www.cgsnet.org

[55]*See* Patricia Chow and Megan Putney, *Attitudes and Perceptions of Prospective International Students from India*, IIE Briefing (New York: Institute of International Education, January 2010).

[56]Ibid., 1. *Sic.*

[57]Ibid., 5.

[58]*See* Wadhwa et al., 2009.

Nyland et al. examine the lack of international student workers' rights in the Australian context.[59] The authors take a critical view of how international students in Australia are taken advantage of for their high expertise and low wage susceptibility. In a more specific piece that examines technological jobs in Australia and the subsequent career paths, Giles et al. examine domestic and international "pathways" scientifically-based fields.[60] For example, Giles et al. explain:

> pressures are high and job security is low for SET [science, engineering and technology] postgraduates pursuing a research career in Australia. The lack of job security has identified a need for urgent attention to ensuring rewarding and secure career paths for early career SET researchers.[61]

As a result, SET jobs in Australia are increasingly competitive considering there are limited numbers of "good paying" jobs.[62] Due to the low job prospects in the SET fields in Australia, more HEI's are attempting to build stronger relationships with industry.[63] In

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[59]*See* Chris Nyland, Helen Forbes-Mewett, Simon Marginson, Gaby Ramia, Erlenawati Sawir, and Sharon Smith, "International Student-Workers in Australia: A New Vulnerable Workforce," *Journal of Education and Work* 22, no. 1 (March 2009): 1-14.

[60]*See* Marnie Giles, Chantal Ski, and Davorin Vrdoljak, "Career Pathways of Science Engineering and Technology Research Postgraduates," *Australian Journal of Education* 53 no. 1 (2009): 69-86. *See* also, Penny Enslin and Nicki Hedge, "International Students, Export Earnings, and the Demands of Global Justice," *Ethics and Education* 3, no. 2 (February 2009): 107-119.

[61]Ibid., 84.

[62]*See* David Pick and Jeannette Taylor, "'Economic Rewards Are the Driving Factor': Neo-Liberalism, Globalisation, and Work Attitudes of Young Graduates in Australia," *Globalisation, Societies, and Education* 7, no. 1 (February 2009): 69-82.

[63]For example, *see* H.R. Forsyth, Laxton, C. Moran, J. Werf, R. Banks, and R. Taylow, "Postgraduate Coursework in Australia: Issues Emerging from University and Industry Collaboration," *Higher Education* 57, no. 5 (May 2009): 549-566. For additional literature on work-related factors of decision-making, *see* Thomas H. Benton, "Manage Your Career, Making a Reasonable Choice," *Chronicle of Higher Education*, April 18, 2010. Retrieved online on April 23, 2010 at: http://chronicle.com/article/News-Analysis-In-India/65407/; Commonwealth of Australia, "APEC and International Education," Department of Education, Employment and Workplace Relations, Centre for International Economics. Canberra & Sydney: January 2008; and Leonard Lynn and Harold Salzman, "The Real Global Technology Challenge," *Change* (July/August 2007): 9-13.

the U.S., government officials see the value of bringing international students to fill the high-tech employment needs and demands of the U.S. economy. In a recent article in the Washington Post, Senators Charles Schumer (Democrat) and Lindsey Graham (Republican) declare,

> Our legislation would award green cards to immigrants who receive a PhD or master's degree in science, technology, engineering or math from a U.S. university. It makes no sense to educate the world's future inventors and entrepreneurs and then force them to leave when they are able to contribute to our economy.[64]

Under current U.S. federal policies, non-U.S. citizens that are recent graduates of Master's and Ph.D. programs are forced to leave the country within sixty days of graduating if they do not find full-time employment.[65] In doing so, Schumer and Graham are advocating for "brain gain" in the sense that they want to keep talented young graduates in the STEM fields in the U.S. after completion of studies in order for economic and technological benefit.[66]

Financial-related Literature

There has been some research on the impact international students have on their host countries.[67] In terms of the economic impact, there is a clear fiscal advantage of

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[64]*See* Charles E. Schumer and Lindsey Graham, "The Right Way to Mend Immigration," *Washington Post*, March 19, 2010, p. A23. Retrieved online on March 30, 2010 at: http://www.washingtonpost.com/wp-dyn/content/article/2010/03/17/AR

[65]*See* U.S. Department of Homeland Security, USCIS website (United States Citizenship and Immigration Services). Retrieved online on December 11, 2010 at: http://www.uscis.gov

[66]*See* Fazal Rizvi, "Rethinking 'Brain Drain' in the Era of Globalisation," *Asia Pacific Journal of Education* 25, no. 2 (2005): 175-192.

[67]For a few examples in India, *see* Tim Allender, "Learning Abroad: The Colonial Educational Experiment in India, 1813-1919," *Paedagogica Historica: International Journal of the History of*

maintaining international student enrollment, as well as an emphasis on continued growth.[68] For Australia, HEIs are the third largest "export"; generating over 15 billion Australian dollars in 2008.[69] However, in his article entitled, "Exports of Education Services Attributable to the Overseas Student Industry in Australia," Robert Birrell contests the government statistics as being overestimated.[70] In a similar vein, Simon Marginson claims, "[w]e have been forced to treat international students as cash cows. We *have* to [emphasis added]. We have to rinse every last dollar of surplus out of international students so as to prop up facilities, and domestic teaching and research."[71] To be sure, Australian HEIs have become so financially dependent on international students that the added value of cross-cultural enhancement is often times periphery.[72]

Education 45, no. 6 (December 2009): 727-741; and Puja Vasudeva Dutta, "Returns to Education: New Evidence for India, 1983-1999," *Education Economics* 14, no. 4 (December 2006): 431-451.

[68]For a statistical description of international students currently working in Australia post-graduation, *see* AEI, Research Snapshot, *International Student Employment Outcomes Survey*. Retrieved online on October 4, 2009 at: http://www.aei.gov.au/AEI/PublicationsAndResearch/Snapshots/2009101610_pdf. *See* also, Janaki Kremmer,,"Australia's Chancellors Turn to New Government as Foreign Enrollments Drop," *Chronicle of Higher Education*, September 22, 2010. Retrieved online on September 23, 2010 at: http://chronicle.com/article/Australias-Chancellors-Turn/124575/

[69]*See* AEI, Research Snapshot, *Export Income to Australia from Education Services in 2008.* Retrieved online on July 19, 2009 at: http://www.aei.gov.au/AEI/PublicationsAndResearch/Snapshots/50SS09_pdf.

[70]Robert Birrell, "Exports of Education Services Attributable to the Overseas Student Industry in Australia," *University World News*, 0088, August 9, 2009. Retrieved online on August 15, 2009 at: http://www.universityworldnews.com/filemgmt_data/files/ExportRevenue%5BFinal%5D.pdf

[71]Simon Marginson, "Global Strategies of Australian Institutions," paper delivered at Financial Review of Higher Education Conference, March 9-10, 2009, Sydney, Australia.

[72]For a scholarly work on international students and their intercultural significance, *see* F.S. Niles, "Cultural Differences in Learning, Motivation and Learning Strategies: A Comparison of Overseas and Australian Students at an Australian University," *International Journal of Intercultural Relations* 19 (1995): 369-385. For more scholarly works on cross-cultural education in higher education in general, *see* A. Kitsantas, "Studying Abroad: The Role of College Students' Goals on the Development of Cross-cultural Skills and Global Understanding," *College Student Journal* 38 (2004): 441-452; Geof Alred, Michael Byram, and Mike Fleming (Eds.), *Education for Intercultural Citizenship: Concepts and*

An outward gaze towards all parts of the world, but especially Asia, has led many Australian HEIs to concentrate their efforts mainly on recruitment strategies in South and Southeast Asia.[73] There are now signs that Latin American students are being targeted by Australian recruitment efforts.[74] In short, the financial importance of international students in Australia is central to the economic condition of higher education in Australia.[75]

Comparisons (Tonawanda: Multilingual Matters Limited, 2006); and Dennis M. McInerney, "Personal Investment, Culture, and Learning: Insights into School Achievement across Anglo, Aboriginal, Asian, and Lebanese Students in Australia," *International Journal of Psychology* 43, no. 5 (October 2008): 870-879.

[73]For examples, *see* Nattavud Pimpa, "The Influence of Peers and Student Recruitment Agencies on Thai Students' Choices of International Education," *Journal of Studies in International Education* 7 no. 2 (Summer, 2003): 178-192; M. Joseph and B. Joseph, "Indonesian Students' Perceptions of Choice Criteria in the Selection of a Tertiary Institution: Strategic Implications," *International Journal of Educational Management* 14 no. 1 (2000): 40-44; and L. Vidovich and Y.M. Sheng, "Global-local Dynamics in Expanding School Choice in Singapore," in *The Globalisation of School Choice?*, edited by M. Forsey, S. Davies and G. Walford (Oxford: Symposium Books, 2008): 209-229.

[74]*See* Janaki Kremmer, "Australia Steps Up Efforts to Recruit Latin American Students, and They Respond," *Chronicle of Higher Education*, August 23, 2010. Retrieved online on September 3, 2010 at: http://chronicle.com/article/Australia-Steps-Up-Efforts-to/124102/

[75]In addition to wide array of scholarly works on the economic importance of international students in Australia, there are supplemental topics within economic perspectives. For a few examples additional scholarly material on consumer, academic, and socio-economic considerations, *see* Gabrielle Baldwin and Richard James, "The Market in Australian Higher Education and the Concept of Student as Informed Consumer," *Journal of Higher Education Policy and Management* 22, no. 2 (2000): 139-148; Kim-Choy Chung, Kim-Shyan Fam, and David K. Holdsworth, "Impact of Cultural Values on Young Consumers' Choice of International Tertiary Education," *Asia-Pacific Journal of Business Administration* 1 no. 1 (2009): 54-67; Gabrielle Baldwin and Craig McInnis, "The Organization of the Academic Year: Trends, Implications and Issues," *Higher Education Group Department of Education, Science and Training* (Canberra: Commonwealth of Australia, 2002): 13-17; Robert Birrell, "Implications of Low English Standards Among Overseas Students at Australian Universities," *People and Place* 14, no. 4 (2006): 51-62; Marcella Mollis and Simon Marginson, "The Assessment of Universities in Argentina and Australia: Between Autonomy and Heteronomy," *Higher Education* 43, no. 3 (2002): 311-330; Gary N. Marks and Julie McMillan, "Declining Inequality? The Changing Impact of Socio-economic Background and Ability on Education in Australia," *British Journal of Sociology* 54, no. 4 (December 2003): 453-471; Simon Marginson, *Education and Public Policy in Australia* (New York: Cambridge University Press, 1993); Simon Marginson, *Educating Australia: Government, Economy and Citizen Since 1960* (New York: Cambridge University Press, 1997); V. Lynn Meek, "Regulatory Framework, Market Competition: The Governance and Management of Higher Education," *Australian Universities' Review* 38, no.1 (1995): 3-10; Margot Pearson, "Framing Research on Doctoral Education in Australia in a Global Context," *Higher Education Research and Development* 24, no. 2 (May 2005): 119-134; and J. Moloney, "Australian

Family-impact Literature

While somewhat limited, there is research that examines the role and influence of family on international higher education decision-making. For example, MacKenzie et al. analyze and decipher parental tendencies when deciding on international programs for their son or daughter.[76] In another parent-focused study, Ridgewell et al. observe factors influencing parental choice at the secondary education level.[77] Rosalyn Ezra provides an interesting case of Israeli parents and their decision processes of sending children to educational institutions within and outside of Israel.[78] In all cases, parents had a strong impact on the decision-making process in each setting. In a work more related to gender roles in India, Kambhampati offers a transparent view of life as a female and the challenges encountered in work and school settings.[79] Moreover, in most decision-making studies, "family influence" is often a factor provided to study participants.

Universities Today," in T. Coady, ed., *Why Universities Matter: A Conversation about Values, Means, and Directions* (St. Leonards, New South Wales: Allen & Unwin, 2000).

[76]*See* Peter MacKenzie, Mary Hayden, and Jeff Thompson, "Parental Priorities in the Selection of International Schools," *Oxford Review of Education* 29, no.3 (September 2003): 299-314.

[77]*See* Claire Ridgewell, Neil Sipe, and Nick Buchanan, "School Travel Modes: Factors Influencing Parental Choice in Four Brisbane Schools," *Urban Policy and Research* 27, no. 1 (March 2009): 43-57.

[78]*See* Rosalyn Ezra, "Caught Between Cultures: A Study of Factors influencing Israeli Parents' Decisions to Enroll Their Children at an International School," *Journal of Research in International Education* 6 no.3 (December 2007): 259-286.

[79]*See* Uma Sarada Kambhampati, "Child Schooling and Work Decisions in India: The Role of Household and Regional Gender Equity," *Feminist Economics* 15, no. 4 (October 2009): 77-112. For other related works involving gender issues, *see* Santoshi Halder, "Prospects of Higher Education of the Challenged Women in India," *International Journal of Inclusive Education* 13, no. 6 (September 2009): 633-646; and Alison J. Little and Bernardo A. Leon de la Barra, "Attracting Girls to Science, Engineering and Technology: An Australian Perspective," *European Journal of Engineering Education* 34, no. 5 (September 2009): 439-445.

Summary of Literature Review

As mentioned above, the financial impact of international students on their host country has been well documented.[80] Another significant impact international students have on their HEIs abroad can be seen through the academic resources they bring to the classroom.[81] As noted previously, international students are able to assist professors in the technical related fields, such as engineering. Additionally, several studies illustrate work-related experiences that occur upon graduation.[82] Despite the importance of research literature on international students and their financial, academic, and cross-cultural impact on their host country and graduate institution, little is known about their decision-making processes.[83] Much is to be gained by unraveling the complexity of international school choice, as I do here with reference specifically to students from India entering graduate engineering programs. With a better understanding of students' decision-making processes, graduate engineering programs in Australia and the U.S. can

[80]Besides the research literature mentioned thus far, there are several additional reports worth mentioning. For example, *see* Veronica Lasanowski, "International Student Mobility: Status Report 2009," *The Observatory on Borderless Higher Education* (London: 2009). *See also,* T.W. Mazzarol et al., "Perceptions, Information and Choice: Understanding How Chinese Students Select a Country for Overseas Study," *Australian Education International, Department of Education, Training and Youth Affairs* (Canberra: Commonwealth of Australia, 2001b).

[81]For example, *see* Dahlgren et al., "Students as Journeymen between Cultures of Higher Education and Work: A Comparative European Project on the Transition from Higher Education to Working Life," *Higher Education in Europe* 32, no. 4 (April 2008): 305-316. *See also,* John Buchanan, Sue Gordon, and Sandy Schuck, "From Mentoring to Monitoring: The Impact of Changing Work Environments on Academics in Australian Universities," *Journal of Further and Higher Education* 32, no. 3 (August 2008): 241-250.

[82]Wadhwa et al., 2009. *See also,* Lana Khasawneh, Salah Hailat, and Mohhamad Jawarneh, "University Students' Readiness for the National Workforce: A Study of Vocational Identity and Career Decision-Making," *Mediterranean Journal of Educational Studies* 12, no. 2 (June 2007): 27-42.

[83]Academic expectations are high for students entering a foreign system of higher education. For a look at academic expectations of graduate students attending schools in Israel, *see* Rachel Pasternak, "Choice of Institutions of Higher Education and Academic Expectations: the Impact of Cost-benefit Factors," *Teaching in Higher Education* 10 no. 2 (April 2005): 189-201.

better serve to the expectations of students from India in terms of recruitment, retention, and an abundance of additional elements that influence the decision-making process.

As indicated, there is a plethora of scholarship related to international students, higher education, and engineering in general. Where the current and past scholarship falls short is with respect to graduate students from India and their decision-making processes when selecting an HEI abroad in the fields of engineering. By utilizing past and recent scholarship in areas of international school choice, the global market of higher education, and the internationalizing field of engineering; coupled with the analytic tools of comparative and international education, my conceptual framework clear; push *and* pull factors are important in understanding the decision-making process. In doing so, the context for "why" this research topic is important comes to light. Moreover, by reviewing the relevant research literature, it is clear that a more thorough analysis is needed to understand factors that influence the selection and choice of a graduate institution in the U.S. and Australia. Placed within the larger picture of student mobility and the emerging global market of higher education, a research design has been formulated around my primary research question which asks, *why do students from India pursue higher education in Australia and the United States of America*?

CHAPTER THREE

METHODOLOGY

Introduction

The research questions above are worth pursuing for a number of reasons. U.S. and Australian higher education institutions are increasingly reliant on students from India to fill enrollment gaps in graduate programs in engineering. Additionally, there would be a technological expertise vacuum in both the U.S. and Australia if students from other countries did not stay in country after graduation to pursue work-related opportunities. By understanding "why" graduate degree-seeking engineering students from India select institutions abroad, universities in the U.S. and Australia can obtain a better understanding of graduate student mobility in the global market of higher education. In order to understand "why" students from India select institutions outside their home countries, a mixed methods approach was employed in order to capture both quantitative and qualitative data related to decision-making processes. Additionally, a review of the ethical standards of the proposed study was instituted, which resulted in the approval of Loyola University Chicago's Institutional Review Board (IRB) to approve the research project through an expedited review process.

In the aforementioned literature related to decision-making, scholars have postulated an assortment of set of variables that define the framework for examining choice and selection of universities overseas. For example, Taylor and Rees used several

variables in their decision-making analyses and claim that, “the variables 'safe place to study', 'entry into university', 'way of life', 'student visa access' and 'racism' were considered important to International Students when selecting a host country.”[1] These distinctions offer an interesting picture of international student decision-making. Shown in this fashion, Taylor and Rees argue that safety and quality of life indicators are most important in the context of a university located in Melbourne, Australia. In particular, the “way of life” variable is interesting because it can be considered a push *and* pull variable.[2] However, how does a prospective international student truly know another countries “way of life” without experiencing it for themselves firsthand? Yet, according to Taylor and Rees, it is interesting that the perception of *how things are* abroad is a powerful factor in the overall choice and selection of institutions overseas. To be sure, the research presented here involves an in-depth look at the perceptions of students from India and their decision-making process *after* they made the decision to study overseas.[3]

Research Methodology

In order to address the research questions above, the following section will describe in detail the specifics of each phase of instrument design, data collection, and subsequent data analysis. Bearing in mind that there are many appropriate instruments to gather data in the scope of this research, important considerations will be made in this

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[1]Taylor and Rees, 7.

[2]For example, students may be “pushed” towards the way of life in Australia due to an unwanted way of life in India. Meanwhile, students may also be “pulled” at the same time due to the attractiveness of the perceived way of life abroad.

[3]Students that participated in this study were already located in the U.S. and Australia, respectively.

section in relation to varying methods to be used in addressing the research questions under consideration and the measures used. As will be shown, a detailed plan for the collection of data and methodological strategies within each phase helped facilitate the conceptualization of a mixed-methods approach when planning and gathering key information regarding key factors of decision-making. Lastly, a summary will conclude the envisioned analysis and lead into the data analysis chapters.

Before I articulate an explanation for selecting the chosen instrument(s) for data collection, I will first begin with a series of definitions that aid the conceptualization of the research methodology. Here, I define mixed-methods as a social-scientific approach to understanding a human phenomena whereby the "how," "why," "when," and "where" questions are addressed through the application of an online questionnaire and follow-up interviews to be synthesized and triangulated with existing scholarly literature and theory applicable to the research questions under examination. The human phenomena under consideration here is the decision-making processes undergone by students from India pursuing graduate degrees in engineering in Australia and the U.S. As mentioned previous, but worth repeating is the important distinction that decision-making processes have already occurred for students involved in the study. Students from India that participated in the survey and interview process have already selected an institution in the U.S. or Australia and were currently enrolled at the time of data collection. Whereas Gatfield and Larmar, in their study of students from Singapore, examine behavioral patterns that impact decision-making, I am more interested in students' *reflection* on *why* they made the decision to pursue a graduate degree abroad. "Engineering" graduate

degrees are defined as any graduate degree that includes *engineering* in its specification, including computer science.[4] Additionally, "students from India" are defined as any person residing in, or having citizenship from India, during the time of the "decision-making process" and/or who attended secondary and/or postsecondary education in India (or elsewhere) – as well as those same persons that were previously in work-related positions, including the unemployed within India during the same decision-making time period. As such, the foundation for answering the research questions is to design and administer a survey instrument followed by a subsequent interview phase to be conducted with approximately twenty survey respondents that willingly volunteer to be interviewed.

Research Design

In the first phase of the research design, an online questionnaire was distributed to a target sample population of students from India.[5] The sample was a convenience sample of graduate engineering students from India who were currently studying in either Australia or the U.S. at the time on Phase I of data collection. The type of sampling used is also called "purposive" or "judgmental" sampling. This type of sampling is conducted when a researcher selects a sample "on the basis of your own knowledge of the population, its elements, and the nature of your research aims."[6] Each group of students

[4]For example, Princeton Review has categorized various disciplines computer science disciplines within the broad field of engineering. Retrieved online on December 2, 2009 at: http://www.princetonreview.com/Majors.aspx?cat=14

[5]*See* Appendix A: Online Survey. To aid in understanding the five phases of data collection and analysis, *see* Appendix C: Diagram of Research Methods.

[6]*See* Babbie, 97.

– two in the U.S. and two in Australia – consisted of an unknown number of potential survey participants that are students from India.[7]

Samples were drawn from two U.S. universities located in or near a large metropolitan area in the Midwest, and two comparable Australian universities located in Western Australia. The student populations derived from university contacts located in international departments that work academically and/or administratively with students from India in each respective university. By working closely with university staff, I was granted permission to send university contacts a letter (in PDF format) and URL link to the online survey instrument housed at Loyola University Chicago's approved online survey software, Opinio.[8] In order to receive as many responses as possible, I informed each prospective respondent of a randomized volunteer lottery drawing to receive a free iPhone if they participated in the online survey.[9]

Creating the Instrument

According to Earl Babbie, "[*p*]*erfect* surveys may not be possible, but *good* surveys can and should be done."[10] Babbie alludes to the fact that the social scientific researcher must investigate all necessary protocols on the front-end (selection of sample and research tools) so as to avoid as many dilemmas as possible on the back-end (data

[7]The four participating universities did not disclose how many students were contacted via email to volunteer to participate in the online survey.

[8]The online software "Opinio" will be used from Loyola University Chicago. Distribution of the survey was delivered to participants via email. Find more information regarding Opinio on the following website. Retrieved online on October 20, 2009 at: http://www.luc.edu/ors/irbonlinesurveys2.shtml

[9]Two random winners were selected to receive the iPhone. One student in the U.S. and one student in Australia were given an iPhone as a token of my appreciation for participating in the online survey.

[10]Emphasis original. *See* Earl Babbie, *Survey Research Methods*, 2nd Edition (Belmont, CA: Wadsworth, 1990): xviii.

analysis). While this may seem trivial, it is worth noting because any subsequent data collected from a faulty research instrument may not be able to adequately address the "why" and "how" questions. At the end of Phase I (survey distribution phase), the online survey was sent to an unspecified number of students from India currently enrolled in graduate engineering programs in Australia and the U.S.[11] Babbie goes on to say, "[s]urvey research provides an excellent vehicle for the development of useful methods and, by extension, fuller understanding."[12] This is precisely why I administered an online survey to students from India. Additionally, and for the purposes of understanding the decision-making process in greater detail, Chapter Six: Conclusion juxtaposes data collected from the online survey with information obtained from interviews in order to strengthen my understanding of the decision-making process.

Online Survey Design

To specifically address the research questions above, I adopted several strategies for extracting information from respondents who participate in the online questionnaire. For example, I placed demographic information in the middle section of the online questionnaire. According to Babbie, this method increases the probability of the respondent actually finishing the survey. For example, Babbie explains that, "placing these questions at the beginning, as many inexperienced researchers are tempted to do, gives the questionnaire the initial appearance of a routine form, and the person receiving

[11]Survey distribution began in May of 2010 and closed in June of 2010. To reiterate, it is unknown how many students were contacted due to the fact that my university contacts withheld this information despite my request to know how many students were contacted.

[12]Babbie, 47.

it might not be motivated to complete it."[13] Additionally, both closed-ended and open-ended questions were presented to the prospective survey respondents in Phase I (online survey). Furthermore, contingency questions (using step-logic) were used to solicit follow-up information to "yes" or "no" formatted questions.[14] By using step-logic in the online survey, participants answer closed-ended questions and will be directed to related questions for that particular portion of the survey. In doing so, relevant open-ended questions will expand upon previous closed-ended questions in order to address the "why" question.[15] In doing so, only pertinent questions were asked of each participant based on how persons respond to previous questions in the online survey. Additionally, open-ended questions allowed respondents an opportunity to describe their experiences related to decision-making in order to permit participants to elaborate on previous closed-ended survey questions. Phase I (survey distribution) incorporated a methodological approach that was designed to address the "how," "why," "when," and "where" students from India select institutions abroad (see Appendix A: Online Survey).

Pilot Survey

With the purpose of strengthening Phase I of data collection, I administered a pilot study, or "pretest," of a draft version of the online questionnaire. According to Babbie, "[i]t is especially worthwhile to pretest an early draft of what ultimately will be a

[13]Ibid., 141.

[14]Ibid., 137. *See* Appendix A: Online Survey.

[15]*See* Appendix A: Online Survey.

self-administered questionnaire by interviewing."[16] By selecting a sub-sample of students from India to participate in the pretest through convenience sampling, various issues related to the interaction between the respondent and survey increased the "reliability" of data collected.[17] Upon completion of the pretest survey, I informally interviewed six respondents in order to address issues related to reliability. I created the pilot study so that the survey was "as nearly identical as possible to the one intended for the final survey."[18] In this way, the pilot phase ensured that all appropriate features and characteristics of decision-making were inserted into the final survey. In doing so, I "uncover[ed] as many errors as possible before committing major resources to the final survey."[19] By conducting the pilot study, I was able to foresee potential dilemmas that could arise, and most importantly, increase the reliability of all my methods for understanding the decision-making process as a whole. One outcome of the pretest was the inclusion of "location of country" as an option to the first question in the online survey, which asked students what they perceived to be the most important factor in their decision-making process. Babbie goes on to explain that, "[a]n open-ended format can be used profitably in the pretest to determine appropriate response categories for what

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[16]Babbie, 222.

[17]For example, the pretest process assisted in elevating the reliability of data collected in Phase I so as to make items mutually exclusive, avoid ambiguous questions, and ordering of the overall questionnaire (i.e., step-logic). For more information on how pretests can increase reliability, *see* Babbie, 125-145. Another important consideration related to the "ordering" of the questionnaire is the first page of the survey. Often times prospective respondents examine the first page of a survey to see what types of questions will be asked. For this reason I inserted demographic information (i.e., major, level of study, contact information, etc…) towards the end of the questionnaire. *See* Babbie, 141.

[18]Babbie, 226.

[19]Ibid., 227.

will ultimately become a closed-ended question.[20] If the online survey had significant errors this would have undoubtedly impacted later phases of data collection. Instead, the pretest allowed me to explore other indicators of decision-making that would otherwise go unnoticed until the interview phase of data collection (Phase III). Furthermore, due to the varying methodological approaches to be used, I narrowed the methodological scope by administering an online survey that was comprehensive in understanding the decision-making processes of students from India pursuing graduate degrees abroad.

Narrowing Decision-making Variables

Based on previous scholarship on international school choice and decision-making, I used a limited number of decision-making factors in the creation of the online survey instrument. This strategy increased the explanatory power of the data collected. For example, Babbie postulates that "the social scientist is consciously attempting to gain the greatest amount of understanding [explanatory power] from the smallest number of variables."[21] For the purposes of answering my research questions under consideration, I included the following indicators in my survey that may (or may not) influence student choice and selection of an institution in the U.S. and Australia (see Appendix A: Online Survey): *location of country, reputation of HEI, work-related opportunities,* and *friends and family pressures*. As shown in Appendix B: Interview Protocol, these indicators or "factors" will be elaborated on in more detail in the qualitative data collection section of

[20]Ibid., 222.

[21]Ibid., 25.

this study (see Chapter Five – Interviews).[22] As will be seen in Chapter Five, follow-up interviews help dig deeper into the complex aspects of the overall decision-making process.

Likert Scale Questions in Online Survey

Following the closed and open-ended questions in the online survey, and after the demographic section, survey participants were presented with a series of questions that were constructed in Likert scale format.[23] In this section of the survey, students were asked similar questions related to the closed-ended and open-ended questions located in previous sections of the online survey.[24] Using Likert scale questions in the online questionnaire increased reliability while at the same time incorporated multiple ways of retrieving decision-making information from respondents. Upon closing the online survey, an initial analysis of the survey data was an essential phase (Phase II) in the timeline of data collection because it allowed the researcher to strategically select interviewees based on responses retrieved from the online survey.[25] As a result, Phase III

[22]*See* Appendix B: Interview Protocol.

[23]For instance, the questionnaire addressed questions related to "how," "why," "when," and "where" students from India selected a graduate institution in Australia or the U.S. This corresponds with the section of the questionnaire that asks respondents whether or not they "strongly disagree," "somewhat disagree," "disagree," "don't agree or disagree," "agree somewhat," "agree," or "strongly agree" (s*ee* Appendix A: Online Survey). For more information on the Likert scale, *see* Babbie, 127.

[24]*See* Appendix A: Online Survey.

[25]As stated previously, in order to aid in the understanding of the five phases of data collection and analysis, *see* Appendix C: Diagram of Research Methods.

(follow-up interviews) consisted of strategically selected survey respondents for follow-up interviews.[26]

Interview Protocol

Phase III involved the collection of data through follow-up interviews.[27] Only respondents that volunteered to be contacted were invited for a follow-up interview.[28] The methodology used in Phase III subscribes to an "interpretivist" approach to understanding the qualitative data collected through the interview portion of data collection.[29] Some qualitative studies use focus groups; however, due to logistical constraints I was not able to organize any such method of interviewing. For example, Maringe and Carter when examining the experiences of international African students,

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[26]All strategically selected interviewees volunteered to be selected for the follow-up interview. *See* Appendix A: Online Survey, question #42.

[27]For qualitative literature involving interviewing of human subjects, *see* Joseph A. Maxwell, "Understanding and Validity in Qualitative Research," *Harvard Educational Review* 62, no. 3 (Fall 1992): 279-300; A. Strauss and J. Corbin, *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (Thousand Oaks: Sage, 1998); Michael Haugh, "The Discursive Negotiation of International Student Identities," *Discourse: Studies in the Cultural Politics of Education* 29, no. 2 (June 2008): 207-222. Helen B. Miltiades, "Interview as a Social Event: Cultural Influences Experienced While Interviewing Older Adults in India," *International Journal of Social Research Methodology* 11, no. 4 (October 2008): 277-291; R.E. Boyatzis, *Transforming Qualitative Information: Thematic Analysis and Code Development* (Thousand Oaks: Sage, 1998); D. Ceglowski, "That's a Good Story, But is it Really Research?," *Qualitative Inquiry* 3, no. 2 (1997): 188-201; A. Peshkin, "The Goodness of Qualitative Research," *Educational Researcher* 22, no. 2 (1993): 24-30; and K.R. Howe, "Getting over the Quantitative-Qualitative Debate," *American Journal of Education* 100, no. 2 (1992): 236-256. *See also*, Sandra Mathison, "Why triangulate?," *Educational Researcher* 17, no. 2 (1988): 13-17; Michael Crossley and Graham Vulliamy, "Case-Study Research Methods and Comparative Education," *Comparative Education* 20, no. 2 (1984): 193-207; and Kenneth R. Howe, "The Interpretive Turn and the New Debate in Education," *Educational Researcher* 27, no. 8 (November 1998): 13-20.

[28]*See* Appendix A: Online Survey, question #42.

[29]*See* Norman K. Denzin and Yvonna S. Lincoln (Eds.), *Collecting and Interpreting Qualitative Materials*, 2nd Edition (Thousand Oaks: Sage, 2003): 9. *See also*, Geoff Troman and Bob Jeffrey, "Qualitative Data Analysis in Cross-Cultural Projects," *Environmental Education Research* 14, no. 3 (July 2008): 511-525; and M.Q. Patton, *Qualitative Evaluation and Research Methods* (2nd ed.) (Newbury Park: Sage Publications, 1990).

"employed focus group interviews with twenty-eight students studying in two universities in the South of England."[30] Rather, I conducted individual semi-structured interviews representing four different universities in order to examine why students from India selected an institution in Australia or the U.S. At the conclusion of all twenty interviews, I then moved onto transcriptions and analyses of interviews and field notes. At the end of both phases of data collection, I had a plethora of original data that was drawn from both quantitative and qualitative means.

Data Analysis – Phase II

After attaining a plethora of primary source material from the previous phases, I began the data analysis phases of my research methodology.[31] Phase II primarily consisted of constructing numerous "indicators" of student mobility in the India context. By understanding the most commonly cited factors related to choice and selection of universities overseas, as indicated in the initial data analysis of the online survey (Phase II), I was able to strategically select students for follow-up interviews. In doing so, major themes began to emerge related to the decision-making process. To be sure, initial findings from the online survey were compared and contrasted with existing literature, which will be synthesized and triangulated in the subsequent data analysis sections.[32] As these themes began to emerge, I identified key areas and factors of decision-making that

[30]Maringe and Carter, 459.

[31]*See* Appendix C: Diagram of Research Methods.

[32]In addition to the previously mentioned U.S-based literature on college choice, *see* John A. Douglass, *The Conditions for Admission: Access, Equity, and the Social Contract of Public Universities* (Stanford: Stanford University Press, 2007); and W.G. Tierney and L.S. Hagedorn, *Increasing Access to College: Extending Possibilities to All Students* (Albany: SUNY Press, 2002), and J.A. Soares, *The Power of Privilege: Yale and America's Elite Colleges* (Stanford: The Stanford University Press, 2007).

were retrieved from a wide range of student perspectives. These perspectives largely focused on the reputation of the institution, "where" the country is located, and work-related opportunities. Accordingly, the initial data analysis of the survey data (Phase II) helped inform the strategic selection of students that represented the decision-making areas previously mentioned, in addition to a few outlier respondents (family and friends' influence).

The first phase of data analysis (Phase II) began shortly after the online questionnaire was closed (June 2010).[33] It was imperative that a careful analysis of data collected from Phase I be included because of the implications on Phase III of data collection (interviews). Based on the data received from Phase I and II, a series of procedures took place. First, the impetus was to identify and separate out "common" responses from "outlier" responses.[34] At the same time, I had immediate access to the closed-ended and Likert scale responses due to sectional distinctions built into the survey on the front-end. For example, respondents that selected "strongly agree" or "agree" in the Likert formatted questions were then compared to factors of decision-making in section I of the online survey (closed-ended questions). Similarly, respondents that selected "family influence" to the closed-ended questions, but were not "common" responses indicated that "family" was an outlier, but still an important consideration to be

[33]*See* Appendix C: Diagram of Research Methods, Figure 2.

[34]It should be stated that I am just as interested in the outliers as I am interested in the most "common" areas of influential factors. I define the term "outlier" as a survey respondent that is not cited as often as other more "common themes of decision-making. For a quantitative definition of the term "outlier," *see* David C. Howell, *Statistical Methods for Psychology,* 6th ed. (Belmont: Wadsworth, 2007), 20.

addressed further in follow-up interviews. Upon completing the initial survey data analysis (Phase II), I began contacting specific individuals for Phase III of data collection (interviews).

Data Analysis – Phase III (Interviews)

Aside from the inferred context that a mixed-methods study implies, the main purpose of conducting interviews was to enrich the survey data retrieved from the online questionnaire. Upon analyzing data gathered from the survey, decision-making themes began to emerge indicating precisely "how" students from India perceived their decision-making process and arrival at HEIs in Australia and the U.S. While some decision-making factors may appear to be "more common" others, Phase IV (survey data analysis) was instrumental in highlighting key features and characteristics that influence students' decision-making process. As indicated earlier, an initial round of survey data analysis occurred to aid in the strategic selection of interviewees. Transcriptions then took place after all interviews were completed. As will be discussed in subsequent chapters, an analysis of the interview data and field notes culminate into rich set of data on the factors influencing choice and selection of graduate institutions in the U.S. and Australia.

Data Analysis – Phase IV (Statistical Analysis of Survey Data)

The statistical analyses of the online survey data offered an in-depth look at the relationship between various actors and factors of decision-making. Pearson's Chi-Square tests were the main statistical measures run when examining the relationship (or lack thereof) in the form of nominal and ordinal scales, depending on the variables

measured.[35] Regarding nominal scales, the various decision-making factors, or variables, were categorized into labels such as *location of country, reputation of HEI*, *work-related opportunities*, and *friends and family pressures*. For example, "location of country" was assigned the numerical value of 1, reputation = 2, and so on. In this way, Chi-Square tests were used to measure variables associated with closed-ended survey questions in conjunction with university and gender as the scope of analysis. As a result, the way in which male and female respondents answered particular questions in the online survey revealed statistically significant indicators, as well as similarities and differences to such questions. Additionally, universities were also tested in this way to determine how each participating university responded to certain factors of decision-making.

Regarding the Likert scale survey questions, ordinal measurements were conducted using the Pearson Chi-Square test. An ordinal scale test was used in order to code numeric values associated with the Likert scale. For example, values 1-5 were labeled in accordance with survey options of "strongly disagree" (1), "disagree" (2), "don't agree or disagree" (3), "agree" (4), or "strongly agree" (5). Additionally, a more sophisticated Chi-Square test was employed when there were two independent variables (i.e., gender) so that accurate comparisons could be made between how males and females responded to various factors of decision-making. In this nonparametric approach to data analysis, the Mann-Whitney test was used in order to account for gender variation

[35]The statistical software, SPSS was used for all statistical data analyses. For a detailed description of nominal and ordinal scales, *see* Howell, 6.

of two or less variables (male/female) on an ordinal scale (e.g., Likert scale).[36] Furthermore, the Kruskal-Wallis test was used in order to distinguish the four participating university responses when comparing answers to the Likert scale questions in the online survey.[37]

Data Analysis – Phase V (Analysis of Interview Data)

The final phase of data analysis consisted of an examination of the interview data. Twenty interviews were conducted over the months June, July, and August of 2010. Upon transcribing the data, I constructed a typology of various themes that emerged from the text of each interviewee. After the content analysis was completed, comparisons were made between the Australian-based and U.S.-based student transcriptions. In Chapter Five – Data Analysis of Interviews, various decision-making themes such as reputation, rankings, location of country, work-related opportunities, family, and friends will be analyzed and compared across the different contexts of Australia-based and U.S.-based students from India.

In the following data analysis chapters, the names and identities of survey respondents and interviewees will be protected through the creation of fictitious individuals that portray various modes of decision-making factors. In the data analysis sections, original data will be presented that will be an original contribution to the field of comparative and international education. Due to the fact that there were multiple "phases" and "sub-phases" that make up the entire methodological framework, it is

[36]For more information about the Mann-Whitney test, *see* Samuel B. Green and Neil J. Salkind, *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data*, 5th Edition (Upper Saddle River: Pearson Education, 2008): 377.

[37]*See* Green and Salkind, 383.

noteworthy to re-emphasize the figures shown in Appendix C: Diagram of Research Methods that illustrates the five phases of the mixed-methods approach steering the research methods.[38] In doing so, "how" students came from India to pursue graduate education overseas emerge in such a way so as to aid in the understanding of "why" students selected HEIs in the U.S. and Australia.

[38]*See* Appendix C: Diagram of Research Methods, Figures 1-5.

CHAPTER FOUR

DATA ANALYSIS: ONLINE SURVEY

Introduction

Chapter Four analyzes data retrieved from the online survey instrument. The online survey included both quantitative and qualitative questions. Closed and open-ended questions were used to allow participants the opportunity to select factors of decision-making through a variety of ways. For example, multiple choice, Likert scale, and open-ended questions were used throughout the survey. In total, there were 41 questions included in the online survey. As indicated earlier, contingency questions using step-logic were used to solicit follow-up information to "yes" or "no" formatted questions. For instance, by using step-logic in the online survey, participants that selected "none of the above" in closed-ended type questions were given the opportunity to explain "why" they selected "none of the above" by prompting the respondent to elaborate through an open-ended text box. In this way, the survey instrument collected both quantitative and qualitative data. For the purposes of Chapter Four, only the quantitative portion of the online survey will be discussed. For more information regarding the qualitative aspects of the online survey, see Chapter V: Data Analysis – Interviews.

The online survey data was drawn from a population of students from India enrolled in full-time degree-seeking graduate programs in engineering or computer

science. Four higher education institutions participated in the study; two universities in the U.S., and two in Australia. Each institution agreed to send a direct URL link to their respective students that led participants to the online survey.[1] Participating institutions were not able to inform the researcher about the number of students that were emailed to participate in the survey. For the purposes of anonymity, none of the participating institutions will be identified. Rather, the universities located in the U.S. have been labeled USA-1 and USA-2. Similarly, the two participating Australian institutions have been labeled AUS-1 and AUS-2. Respondents from all universities in the study totaled 135 (collectively). Regarding U.S.-based vs. Australia-based students, there were a total of 118 U.S. respondents and 17 Australia respondents, respectively. As will be discussed below, U.S. and Australian enrolled respondents were grouped together, as well as separated according to their level and field of study, age, gender, and country of study. A brief background regarding the demographics of 135 respondents follows.

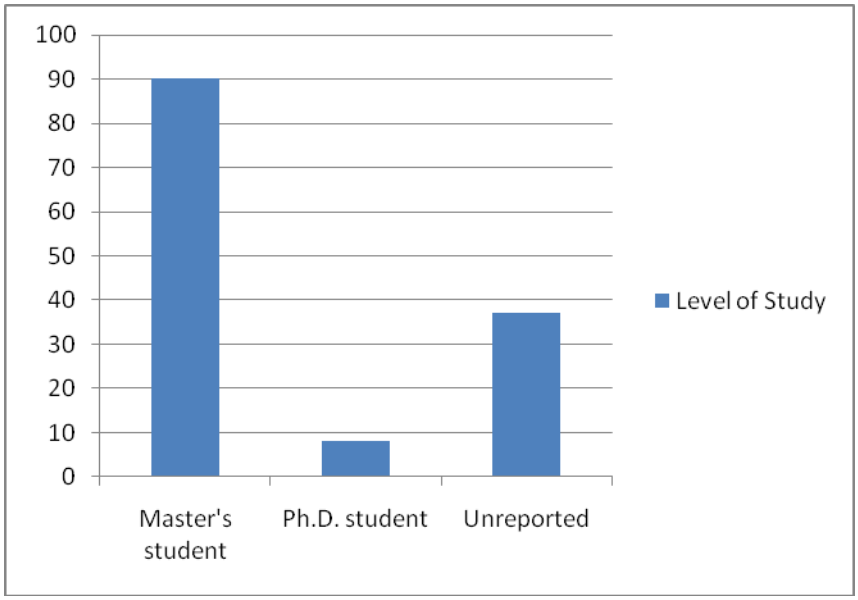
Level and Field of Study

The survey results revealed most respondents were enrolled in Master's programs – 90 out of 135 (67%). For those that answered the question related to "level of study," eight students were currently enrolled in Ph.D. programs at the time of survey completion (6%). In the U.S., there were six Ph.D. students representing engineering (4%) and computer science (2%) fields. Meanwhile, in Australia, there were two doctoral students that participated in the online survey. Both students were currently enrolled in Ph.D. programs in engineering; one in antenna engineering and the other in mechanical

[1]*See* Appendix A: Online Survey.

engineering. Thirty-six respondents neglected to respond to the level of study question in the online survey (26%). As shown in Table 1 below, the majority of the survey respondents were Master's level students.

Table 1. Level of Study



Regarding field of study, the majority of respondents indicated they were currently enrolled in engineering or computer science graduate programs (73%). As indicated below in Table 2, 64 respondents indicated they were enrolled engineering majors (47%) while 34 showed they were computer science majors (27%). With respect to the engineering majors, the majority of respondents specialized in electrical and computer engineering. Respondents in the field of computer science did not indicate any kind of specialization. It is not surprising that computer science students did not indicate a specified major whereas the field of engineering has many different specializations.

According to the *National Academy of Engineering (NAE)*, the field of engineering has twelve "broad" areas representing an array of specializations within each area.[2] These twelve sub-fields of engineering include Aerospace Engineering; Bioengineering; Chemical Engineering; Civil Engineering; Computer Science and Engineering; Electric Power/Energy Systems Engineering; Electronics Engineering; Industrial Manufacturing and Operational Systems Engineering; Materials Engineering; Mechanical Engineering; Earth Resources Engineering; and Special Fields and Interdisciplinary Engineering. Interestingly, NAE has categorized the field of computer science as *Computer Science and Engineering* and defines this branch of engineering as "computer, computational, communication, and information science and engineering, including related interdisciplinary and emerging fields."[3] Due to the blurred boundaries between the fields of computer science and engineering, this study includes both fields and defines them under the overarching umbrella of the STEM (science, technology, engineering, and mathematics) fields. Moreover, computer science *is* engineering according to NAE.[4]

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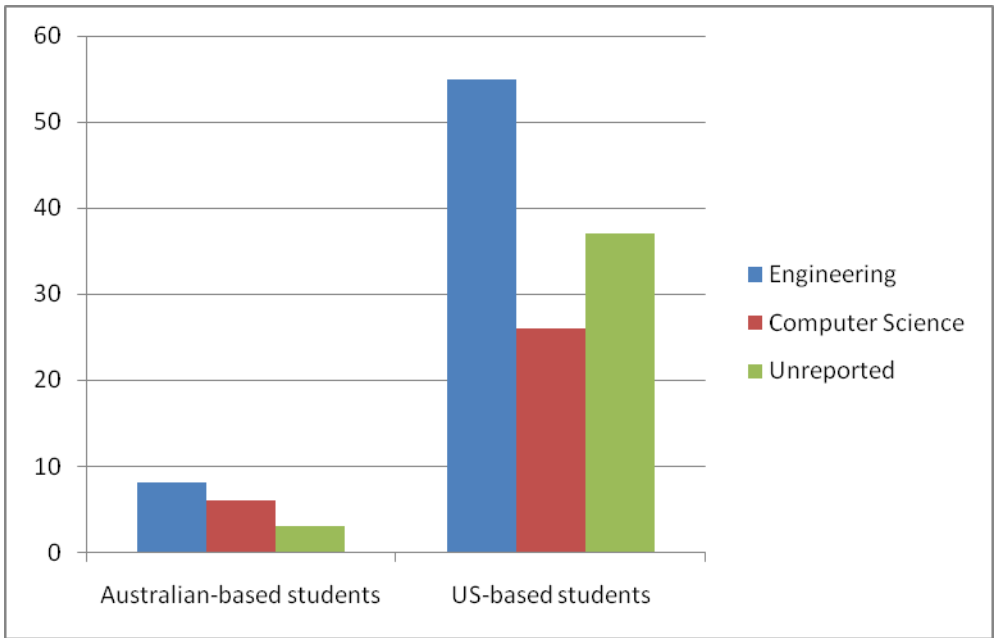
[2]*See* National Academy of Engineering definitions. Retrieved online on October 23, 2010 at: http://www.nae.edu/MembersSection/Sections.aspx

[3]Ibid.

[4]Emphasis added.

Table 2. Field of Study



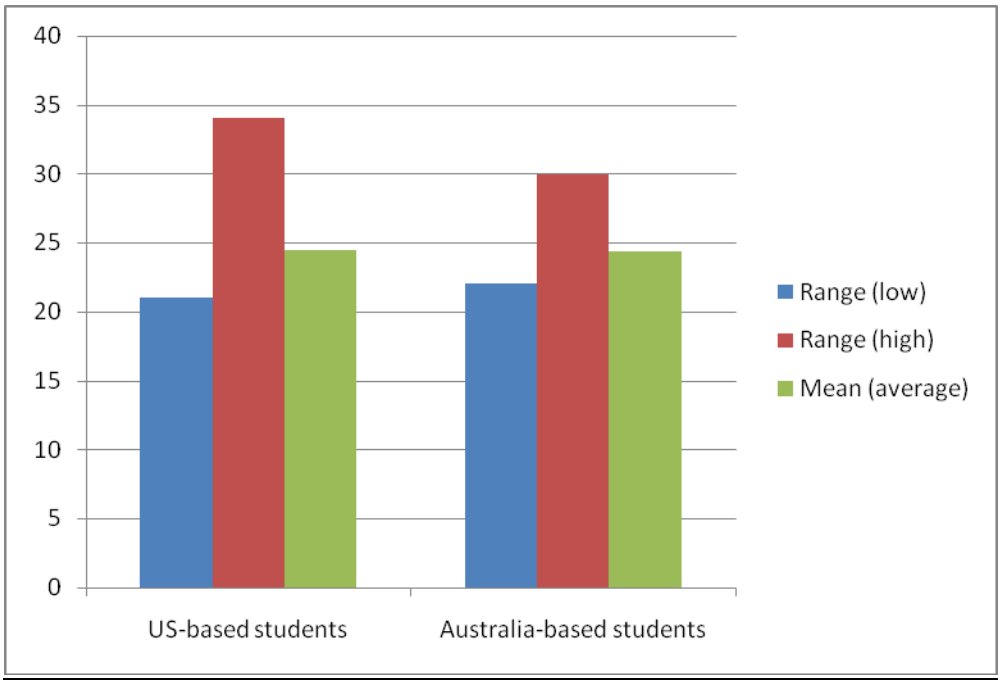
Notwithstanding the shortcomings of an uneven response rate between students based in Australia and students in the U.S., the majority of participants were enrolled in "engineering" fields. Computer science students accounted for 34 of the total respondents (27%) and 37 students did not indicate their field of study (26%).

Age of Study Participants

The average age of survey respondents was 24 years old. For the U.S. population, the majority of respondents were an average age of 24.5. Interestingly, for respondents enrolled in Australian graduate institutions the mean age of respondents was also 24 (24.35714). The youngest U.S.-based student indicated their age as 21. Similarly, the youngest Australia-based respondent was 22 years old. The oldest aged respondent for the U.S.-based population was 34 years old whereas the oldest student in the Australia-

based population was 30 years old. Table 3 below shows the age distribution according to their country of study.

Table 3. Age of Students



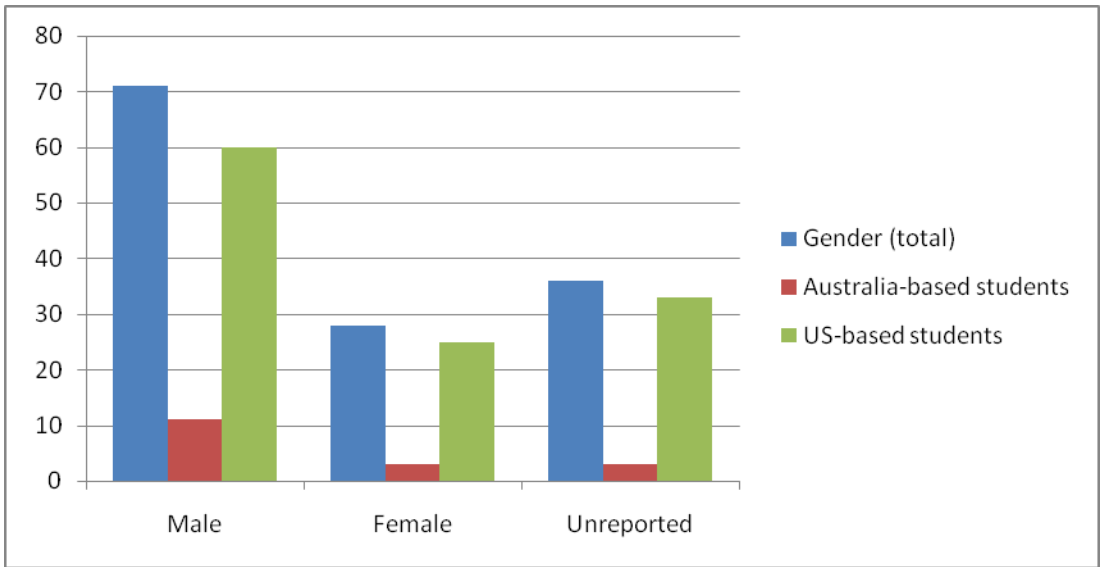
Despite the difference in the number of respondents based in the U.S. vs. Australia, students' range of age was very similar. This suggests that students from India that pursue graduate degrees abroad in the U.S. and Australia are doing so in relatively the same age groups. Thirty-seven respondents did not choose to report their age (27% unreported).

Gender of Study Participants

With respect to gender, the majority of respondents that indicated their sex were male. Collectively, 71 respondents were male, 29 female and 37 unreported. The disproportionate male to female ratio was to be expected given that most students

enrolled in graduate programs in the STEM fields are male.[5] For the Australia-based students, 11 respondents indicated their sex as male, 3 female and 3 unreported. Regarding the U.S.-based students, 60 respondents were male, 26 female and 34 unreported. Table 4 below shows the breakdown of gender based on the country of study.

Table 4. Overall Gender



The gender disproportion is somewhat misleading due to the fact that there were 37 unreported gender types. Collectively, the gender breakdown consists of 53% male, 21% female, and 26% unreported.

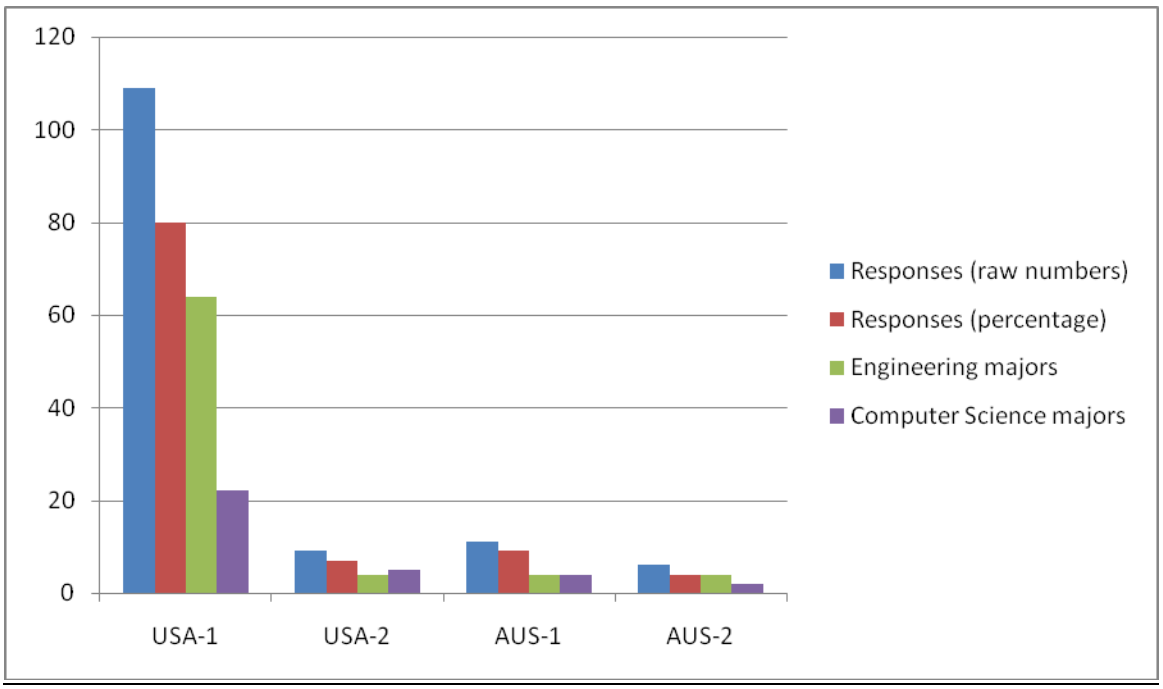
University Comparisons

The following categorizes survey respondents by university. As stated previously, the name of the four participating institutions will remain unidentified in

[5]For more information on gender disparities in the STEM fields, *see* Xianglei Chen and Thomas Weko, "Students Who Study Science, Technology, Engineering, and Mathematics (STEM) in Postsecondary Education" (Washington DC: National Center for Educational Statistics, July 2009).

order to protect the anonymity of these institutions. The two U.S.-based institutions are close to or located in a large Midwestern city. Regarding the two Australia-based institutions, both are located in Western Australia. In total, there were 135 respondents from both U.S. and Australia-based institutions. As mentioned previously, there were 118 U.S.-based and 17 Australia-based participants. Eighty-seven percent were U.S.-based while 13% were Australia-based. As shown in Table 5 below, the majority of respondents came from "USA-1" institution (80%). USA-2 accounted for 7% of the overall responses. The remaining responses came from AUS-1 (9%) and AUS-2 (4%) universities.

Table 5. University Comparisons by Major



In the following section variations of responses (by university) to particular questions in the online survey are analyzed. University specific responses are examined

to show how participants answered questions in the online survey related to what they perceived as the most important factor in their decision-making process. Additionally, "when" they decided to pursue graduate education oversees and "gender" related issues will be discussed. In the subsequent section, each university has been grouped together in order to address how each group of participants responded to various questions in the online survey.

Methodology of Online Survey

Before detailing each of the participating university responses in group form, it is important to recognize and reiterate the methodology of the online survey instrument. In order to understand "why" students from India in this study went to the U.S. or Australia for graduate school, the online survey was separated into three sections. The first section of the online survey addressed "why" students selected graduate institutions in the U.S. and Australia. What follows is an analysis of the closed ended questions in the first section of the online survey.

In the first section of the online instrument, participants were asked what was most important about why they selected an educational institution overseas.[6] Participants were given six options to choose from: (1) The reputation of the institution; (2) The country where the institution is located; (3) Family influence; (4) Friend influence; (5) Work-related opportunities; or (6) None of the above. Based on the response to this question, participants were then directed towards to the next most applicable question. For example, if the survey participant selected "none of the above," that individual was

[6]*See* Appendix A: Online Survey.

directed to an open text box whereby they were asked to describe their most important reason for why they selected a graduate institution overseas.

University Responses and Decision-making Factors

Respondents enrolled in U.S. graduate institutions indicated *reputation of the institution* as the most important factor for deciding on a graduate institution overseas. As shown in Table 6 below, U.S.-based students indicated that reputation of the institution was the most important factor. Similarly, the reputation of the department was cited as an important factor in their decision-making process. In order to better understand the relationship between U.S.-based respondents that selected institutional reputation vs. departmental reputation as the most important reason for selecting institutions in the U.S., several statistical tests were conducted using SPSS statistics software. For example, as indicated below in Table 6, I ran a Chi-Square test to show the relationship (or lack thereof) between respondents that were enrolled in U.S. and Australian institutions and those that indicated reputation as the most important factor in their decision-making process.

Table 6. Question #1 Responses by University

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
	The reputation of the institution	3	42	1	5	51
	The country where the institution is located	2	30	2	1	35
	My family influence	0	3	1	0	4
	Work-related opportunities	3	28	4	0	35
	None of the above	3	6	1	0	10
Total		11	109	9	6	135

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.233[a]	12	.109
Likelihood Ratio	17.206	12	.142
Linear-by-Linear Association	2.504	1	.114
N of Valid Cases	135		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .18.

To be sure, the sheer number of responses to question #1 indicates “reputation of the institution” as the most important factor in the self-reporting online survey (51 total). This equates to 38% of the survey respondents perceive reputation is most important. Yet, there was significant variation across the institutions as to how the students responded to question #1. For example, respondents from USA-2 and AUS-1 institutions cited “work-related” opportunities as the most important factor in their decision-making process. Then, a Chi-Square test was run to determine whether or not there was significant difference in how participants responded across the four participating

institutions. As seen in Table 6 above, there was no significance due to the Pearson Chi-Square value (*p*-value) of .109. In order to be considered significant, the *p*-value should be less than .05 (< .05 = significant and >.05 = no significance). In other words, when the *p*-value is greater than .05, the participants responded with greater similarity to a particular question. When the *p*-value is less than .05, variation in participant responses to a particular question are therefore considered "statistically significant." As will be discussed in more detail in the following sections, *p*-values illustrate how certain variables of decision-making were similar to or different from how students responded to individual questions throughout the online survey. Even though there may not be any statistical significance associated with particular variables, the relationship between how Australia-based and U.S.-based students responded to these questions provides the framework for a comparative analysis and insight into the different student populations and how they perceive the most important factors in their decision-making process.

Stemming from the data retrieved from question #1, it is clear that survey participants had a range of responses to what was perceived to be the most important factor in their decision making process. Due to the fact that there was variation in how students responded to question #1, I conducted three additional Chi-Square tests that looked at the most popular responses that included "reputation of the institution," "country where institution is located," and "work-related opportunities," In Tables 7-14 below, each of these variables are tested in groups and individually to determine their statistical significance (or lack thereof).

Table 7. Chi-Square Test – Question #1 Reputation Responses by University

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q1_reputation_only	1.00	3	42	1	5	51
	2.00	8	67	8	1	84
Total		11	109	9	6	135

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.563[a]	3	.036
Likelihood Ratio	9.103	3	.028
Linear-by-Linear Association	1.740	1	.187
N of Valid Cases	135		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.27.

Based on Table 7 above, it was determined that reputation of the institution is statistically significant (*p*-value = .036). This means that of those participants that selected "reputation of the institution" there was significant difference in how they responded to this question in comparison with those that selected other factors in their decision-making process. The next variable that was pulled out of question #1 in order to determine its significance was "country where the institution is located." As shown in Table 8 below, there was no statistical significance with those that responded with "country" as the most important factor.

Table 8. Chi-Square Test – Question #1 Country Responses by University

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q1_country_only	1.00	2	30	2	1	35
	2.00	9	79	7	5	100
Total		11	109	9	6	135

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.820[a]	3	.845
Likelihood Ratio	.874	3	.832
Linear-by-Linear Association	.042	1	.838
N of Valid Cases	135		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.56.

The *p*-value in Table 8 above is .845. This shows that "country where the institution is located" is not statistically significant. Additionally, it illustrates the fact that participants that selected "country" as the most important factor in their decision-making process were more similar in their responses across all participating universities than different.

The third follow-up statistical measurement from question #1 examined respondents that indicated "work-related opportunities" as the most important factor in their decision-making process. Another Chi-Square test was run to hash out specific information related to the statistical significance of work-related opportunities and the university respondents. Table 9 below shows a *p*-value of .293. While this figure is somewhat close to the .05 indicator, for "work-related opportunities" to be considered significant, it falls short of being "statistically significant" due to the *p*-value = >.05.

Table 9. Chi-Square Test – Question #1 Work Responses by University

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q1_work_only	1.00	3	28	4	0	35
	2.00	8	81	5	6	100
Total		11	109	9	6	135

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.721[a]	3	.293
Likelihood Ratio	5.050	3	.168
Linear-by-Linear Association	.303	1	.582
N of Valid Cases	135		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.56.

As indicated in the above Table 9, work-related opportunities were not considered statistically significant based on the test run (Chi-Square). In this test, as with the two previous, one single variable – in this case "work" – was compared to all other variables in question #1. To be sure, participants that selected "work-related opportunities" as the most important factor in their decision-making process responded with more similarity than difference when looking at the different university responses. That being said, it is interesting that "reputation of institution" and "country where the institution is located" were on different sides of the "response spectrum" when comparing these variables by university. Whereas "country" responses were similar across different universities, those that selected "reputation" were very different in their responses based on their university. Therefore, this suggests that reputation is not always synonymous with the country where the institution is located.

Returning to the "reputation" factor, I also conducted a Chi-Square test for students that expanded upon their "reputation" selection. Since these respondents indicated reputation as the most important factor, I wanted to explore the specific types of reputation that were perceived to be most influential. For instance, participants that selected "reputation" as the most important factor in their decision-making process were then asked (using step-logic), *what is the most important factor that made you choose reputation of the educational institution?* Of the respondents that indicated reputation as the most important factor, the reputation of the *department* was most often selected by U.S.-based students. As Table 10 below explains, the majority of participants (55%) selected the department reputation as most important. Furthermore, "reputation of work opportunities" and "reputation of professor" were cited as the next most important factor by the U.S.-based students. Interestingly, the Australia-based students also selected reputation of department as the most important type of reputation that influenced their decision-making process.

Table. 10 Type of Reputation by University

	University				Total
	AUS-1	USA-1	USA-2	AUS-2	
Reputation of dept	2	24	0	2	28
Reputation of prof	0	1	1	0	2
Reputation of alumni	1	2	0	0	3
Reputation of work opportunities	0	7	0	0	7
None of the above	0	6	0	3	9
Total	3	40	1	5	49

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.399[a]	12	.000
Likelihood Ratio	17.041	12	.148
Linear-by-Linear Association	2.408	1	.121
N of Valid Cases	49		

a. 17 cells (85.0%) have expected count less than 5. The minimum expected count is .04.

Due to the *p*-value of .000, it is clear that there was a significant difference in how students responded to the type of reputation that was considered most important when considering this in their decision-making process. Moreover, it is statistically significant due to the different responses that were given across universities in the U.S. and Australia.

Australian enrolled graduate students from India accounted for 17 total responses in the online survey. Due to the low number of Australia-based student responses, it is

difficult to make accurate comparisons.[7] Yet, of the Australia-based respondents, the most important factor in their decision-making process was also *reputation of the institution*. The similarity of how respondents answered the question related to the most important factor in their decision-making process is interesting. For example, the Australia-based students also indicated "reputation" as the most important factor just as the U.S.-based students indicated. As mentioned previously, the significance of reputation is captured by students that responded to the follow-up reputation question, which suggested that *reputation of department* is the most important factor within the reputation variable.

The last statistical test run that analyzed individual university responses dealt with the question of "when" students decided to pursue graduate school overseas. Participants had the option of selecting follow-up closed-ended questions about when in their life they decided to select an educational institution overseas: (1) During my post-secondary studies; (2) During my time spent in the USA (or Australia); (3) During my work-related experience; (4) During my time being unemployed; and (5) None of the above. The most cited response by both U.S. and Australia-based students was during their "post-secondary studies" (n=65). This equated to 48% of the survey respondents were enrolled in post-secondary education when they decided to pursue graduate education abroad. As shown in Table 12, the majority of respondents indicated that their decision-making process occurred during their post-secondary studies (n=65), followed by when survey participants were "working" (n=34). However, there was much variation in the way

[7]For more information on the limitations of this study, *see* Limitations section in Chapter Six: Conclusion.

participants responded to this question, which makes it difficult to assume that most students did select universities abroad while as an undergraduate or while working.

Table 11. Chi-Square Test – When Decision-making Process Occurred (University)

	University				Total
	AUS-1	USA-1	USA-2	AUS-2	
During post-secondary studies	8	50	5	2	65
During time spent in USA/AUS	0	2	0	0	2
During work	2	29	1	2	34
During unemployment	1	4	2	1	8
None of the above	0	6	1	1	8
Total	11	91	9	6	117

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.112[a]	12	.606
Likelihood Ratio	10.115	12	.606
Linear-by-Linear Association	3.501	1	.061
N of Valid Cases	117		

a. 14 cells (70.0%) have expected count less than 5. The minimum expected count is .10.

As indicated by the *p*-value value of .606 in Table 11 above, it can be determined that there was more similarity in responses than differences across the four participating institutions. When comparing this with earlier analysis, there was quite a difference between respondents when looking at the .606 value from Table 11, and the *p*-value of .000 regarding type of reputation. With regards to "when" survey participants decided to pursue graduate school overseas, it is interesting to consider the age similarity stated

previously. To reiterate, both U.S. and Australia-based students were in the same age group when enrolled in institutions abroad, however, when and where they were professionally (or academically) when they decided was not statistically significant across participating institutions. Therefore, in order to gauge whether or not the two variables of deciding to study in another country for graduate school occurred during "post-secondary studies" vs. during "work-related experiences," each of these variables have been compared individually to all other variables, similar to the follow-up statistical tests that were conducted when analyzing responses to question #1.

Table 12. Chi-Square Test – When Decision-making Process Occurred (University and "Post-secondary Studies")

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q6_during post-secondary studies_only	1.00	8	50	5	2	65
	2.00	3	41	4	4	52
Total		11	91	9	6	117

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.527[a]	3	.470
Likelihood Ratio	2.593	3	.459
Linear-by-Linear Association	1.931	1	.165
N of Valid Cases	117		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.67.

The *p*-value indicated in Table 12 above (.470) compares "post-secondary studies" respondents to all other variables in question #6. This means that those participants that selected "during post-secondary studies" as the time period for when

they decided to pursue graduate school overseas, were not statistically significant based on university comparisons. Additionally, the post-secondary respondents were more similar to each other in their responses (based on university) then they were different from each other as it relates to "when" they decided to pursue graduate school abroad. In Table 13 below, the same Chi-Square test was run to determine the statistical significance of "work-related experience."

Table 13. Chi-Square Test – When Decision-making Process Occurred (University and "Work-related Experiences")

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q6_duringwork_only	1.00	2	29	1	2	34
	2.00	9	62	8	4	83
Total		11	91	9	6	117

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.439[a]	3	.486
Likelihood Ratio	2.772	3	.428
Linear-by-Linear Association	.001	1	.975
N of Valid Cases	117		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.74.

To be sure, the statistical test and output that was conducted for respondents that selected "during work-related experiences" is very similar to those that selected "during post-secondary studies." For example, as indicated in Table 13 above, the *p*-value for work-related experience is .486. This shows that participants that selected "during work-related experience" as the time period for when they decided to pursue graduate school

overseas, were not statistically different based on university comparisons. Therefore, while it is clear that the majority of respondents selected either "post-secondary studies" or "work-related experience" for when they decided to study overseas for their graduate degree, however, it is not statistically significant.

Gender Responses and Decision-making Factors

The next series of statistical tests were conducted to illustrate the relationship (or lack thereof) between gender and "why" and "when" survey participants decided to pursue graduate school overseas. In total, there were 71 males, 28 females, and 37 unreported gender types that responded to the online survey. Regarding the male respondents, 28 indicated *reputation of the institution* as the most important factor for attending graduate school overseas. As shown in Table 14 below, males also indicated "the country where the institution is located" and "work-related opportunities" as the most important factors in their decision-making process. Combining these decision-making variables equates to 90% of males perceiving reputation, where the country is located, and work-related opportunities as the most important factors. The male outlier responses cited family influence as the most important factor in their decision-making process (2%).

Table. 14 Question #1 Responses by Gender

		Gender		Total
		Male	Female	
	The reputation of the institution	28	10	38
	The country where the institution is located	19	4	23
	My family influence	2	1	3
	Work-related opportunities	17	10	27
	None of the above	5	3	8
Total		71	28	99

Interestingly, female respondents indicated that reputation of the institution and work-related opportunities were also the most important factors in their decision-making process. In fact, 24 out of 28 females (86%) were of similar thinking to their male counterparts with respect to what they perceived to be the most influential factor when selecting a graduate institution abroad. Furthermore, as shown in Table 15 below, there is no significant difference in the way males vs. females responded to question #1.

Table 15. Chi-Square Test – Question #1 Responses by Gender

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.811[a]	4	.590
Likelihood Ratio	2.876	4	.579
Linear-by-Linear Association	1.666	1	.197
N of Valid Cases	99		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .85.

The way in which males answered the first question in the online survey was different from how females responded. As shown in Table 15 above, the *p*-value of .590

indicates that there is not a statistical difference in how males responded vs. females. Due to the moderate similarity in responses between males and females, it is reasonable to suggest that while there were similarities in responses, but that the two groups responded differently to what was the most important factor for studying overseas.

Having discovered that reputation of the institution is one of the most important factors in both male and female decision-making, Table 16 below examines further the specific type of reputation that most influenced participants by gender.

Table 16. Type of Reputation by Gender

		Gender		
		Male	Female	Total
	Reputation of dept	20	3	23
	Reputation of prof	2	0	2
	Reputation of alumni	1	1	2
	Reputation of work opportunities	0	3	3
	None of the above	5	3	8
Total		28	10	38

When examining the responses of males and females with respect to “type of reputation” that was most important, it is clear that reputation of the department was most often cited. However, a notable difference can be seen in the way in which females selected “reputation of work opportunities” as the most important type of reputation. For example, while Table 17 below indicates a statistical significance in the similarities between how males and females responded (*p*-value = .015), one difference can be seen by the fact that no males indicated reputation of work opportunities as most important.

Table 17. Chi-Square Test – Type of Reputation by Gender

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.298[a]	4	.015
Likelihood Ratio	12.632	4	.013
Linear-by-Linear Association	5.311	1	.021
N of Valid Cases	38		

a. 7 cells (70.0%) have expected count less than 5. The minimum expected count is .53.

Table 17 above shows statistical significance by the way in which males and females responded to the type of reputation they found to be most influential. The *p*-value = .015, which indicates there is a significant statistical difference in the way males and females perceived reputation.

The final statistical test related to gender examines the time period when respondents decided to pursue graduate school abroad. To be sure, the majority of males indicated they decided to pursue graduate education during their post-secondary studies. As shown in Table 18 below, 43 of 71 males (61%) indicated they decided to select an educational institution overseas during their post-secondary studies. The second highest time period for males was "during work-related experience." Similarly, female participants selected the same two variables of *during post-secondary studies* and *during work-related experience*. The biggest difference, however, as indicated in Table 18 below, is the proportion of female students that selected "during work-related experience" in comparison to their male cohort. For example, ten females indicated that it was "during post-secondary studies" that they decided to pursue graduate abroad. Meanwhile, another ten female students selected "during work-related experience,"

which is significantly different from how the male participants responded to the same question.

Table 18. Gender and When Decision-making Process Occurred

	Gender		Total
	Male	Female	
During post-secondary studies	43	10	53
During time spent in USA/AUS[8]	1	1	2
During work	18	10	28
During unemployment	4	4	8
None of the above	5	3	8
Total	71	28	99

As seen in Table 19 below, the way in which male and female participants responded to "when" they selected a graduate institution overseas is different, although it is not statistically different (i.e., *p*-value = .220).

Table 19. Chi-Square Test – Gender and When Decision-making Process Occurred

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.739[a]	4	.220
Likelihood Ratio	5.647	4	.227
Linear-by-Linear Association	4.347	1	.037
N of Valid Cases	99		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .57.

Additionally, it is interesting to note that there were eight responses that indicated "none of the above" when survey respondents considered the most applicable variable related to "when" they decided to study overseas. There were five males and three

[8]Australia (AUS) replaced "USA" in online survey questionnaire where appropriate.

females that appeared to not fully understand the meaning of “post-secondary studies” since seven of the eight respondents indicated that they were “undergraduates” when they decided to pursue graduate school overseas. Additionally, there was one outlier that stated they knew from “high school” that they wanted to pursue studies in the U.S.

Likert Scale Questions

The final section of the data analysis chapter examines part three of the online survey. As discussed already, there were three parts to the online survey. Part one examined “why” students selected the U.S. or Australia for graduate school via open and closed-ended questions. Part two of the online survey was designed to capture biographical data related to their level of study, field of study, age, etc… Part three of the online survey came in the form of Likert scale questions as it relates to the survey participants decision-making process. In the following section, specific statistical tests were conducted to address the ordinal factors of Likert scale types of questions.

As shown in Appendix A: Online Survey, the third section of the online survey presented participants with a numeric scale of how to rate questions 27-41. In total there were fifteen Likert scale questions that attempted to reiterate previous decision-making queries so as to strengthen the results of the online survey. Participants had five options to select an answer that best matched their perception of a closed-ended statement. For example, participants had the option to select “strongly disagree” (1), “disagree” (2), “don’t agree or disagree” (3), “agree” (4), or “strongly agree” (5) to a statement associated with the decision-making process. The first such statement in the Likert section of the online survey (question #27) states, “The ranking of the institution abroad

influenced me to select the institution abroad." Therefore, students could place a numeric value under the statement that best matched their perspective.

University Responses to Likert Scale Questions

The following statistical outputs reveal the differences and similarities between how particular university respondents answered the Likert scale questions. These questions were related to institutional rankings and reputation, country where the institution is located, family and friends influence, employment opportunities, when they decided to go abroad for graduate school and pathways to permanent residency (citizenship). Due to the fact that there are fifteen questions in the Likert scale section of the online survey, a brief overview, as seen in Table 20, will highlight the *p*-values to each question in one chart. A summary of these tests and outputs will follow.

Table 20. Likert Scale (University): Overview of *p*-values

Ques-tion	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
***p*-value**	.115	.706	.330	.714	.910	.084	.791	.374	.177	.574	.234	.097	.520	.611	.108

As indicated by Table 20 above, there are no statistically significant differences in any of the Likert scale questions. However, as will be discussed, there are several questions that are interesting when comparing these outputs with other Likert questions and their responses. All statistical tables have been consolidated into one table (*see*, Table 20 above). To examine each statistical output for each question in relation to university responses to the Likert scale questions, *see* Appendix D: Likert Scale University Responses.

As noted in Table 20 above, there were several Likert scale questions that were near statistical significance ($p<.05$). These included questions 27, 32, 35, 38, and 41, respectively. While it cannot be stated that these Likert scale questions are statistically significant, what can be inferred from the Table 20 above is that respondents to these questions (27, 32, 35, 38, and 41) were more different from one another than questions 28, 29, 30, 31, 33, 34, 36, 37, 39, and 40. For example, question #27 states that "rankings" influenced the participant to select a university overseas. Thus, the statistical outputs to question #27 reveal a *p*-value of .115 when comparing responses from the four participating universities. Despite the fact that this is not statistically significant, it does inform the researcher that participants that responded to question #27 are more different in their responses than they are similar. Furthermore, this also suggests that U.S.-enrolled students consider the overall reputation of the institution as a more important factor in their decision-making process than their Australian-enrolled counterparts. Correspondingly, statistical measures conducted on questions 32, 35, 38, and 41 also signal that participants responded to these questions more differently in their responses than they did with uniformity.

In reference to question #32, the statistical test run indicates a *p*-value of .084, which shows significant difference and highlights the fact that some respondents were enrolled in post-secondary institutions during the time that they were influenced to study overseas. With regards to question #35, a similar assumption can be made concerning "when" respondents were influenced to select an institution abroad due to the significant difference found between university categorized responses. Likewise, questions 38 and

41 asked participants if reputation of alumni and pathways to permanent residency (citizenship) were influential factors when selecting the institution abroad; of which both factors indicated significant difference in the way responses were given based on university comparisons.

Similarly, and of equal importance, there were several questions that yielded a much higher *p*-value, which is of particular interest when considering the similarity between responses.

For example, question #28 states that the "country where the institution is located" was most influential in their decision-making process. As shown in Table 20 above, the Chi-Square test indicates a *p*-value of .706, which is not statistically significant. However, the closer the *p*-value is to 1 equates to the participants having responded similarly across all universities to that particular question. As such, questions 29, 30, 31, 33, 34, 36, 37, 39, and 40 also highlight the similarity in participant responses to be more uniform than dissimilar. Due to the variance between how participants responded to particular questions suggests that certain variables, or factors of decision-making, can be usefully probed further through qualitative data collection and analysis that will be addressed in the qualitative data analysis chapter (see Chapter Five).

Gender Responses to Likert Scale Questions

The next set of statistical tests show the relationship (or lack thereof) between gender and the Likert scale questions. As was done above, all tables can be viewed in detail in Appendix E: Likert Scale Gender Responses. In addition, Table 21 below indicates the *p*-values for all Likert questions that were compared with gender responses.

Table 21. Likert Scale (Gender): Overview of *p*-values

Ques-tion	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
***p*-value**	.333	.104	.452	.999	.427	.133	.061	.479	.057	.705	.262	.876	.767	.695	.091

Similar to the Likert scale *university* comparisons shown above, the Likert gender comparisons reveal a wide array of varying responses as well. For example, as seen in Table 21, there were several near statistically significant *p*-values that resulted from Chi-Square tests. Responses to questions 28, 32, 33, 35, and 41 all indicate that participants were more different in their responses than similar to one another. Concerning questions 28, 32, 33, and 41, this can be better understood by stating that there is more difference than similarity between male and female responses when considering the decision-making factors such as; location of country, "when" a student decided to study overseas, and pathways to permanent residency (citizenship). Question # 35 was of particular interest in terms of gender and unemployment at the time of decision-making due to the fact that it was the closest *p*-value to being significant than any other statistical analysis in this section (p=.057). As will be discussed in the following data analysis section, another statistical test was conducted in order to examine further the relationship between gender responses and the Likert scale-type questions.

Mann-Whitney Statistical Analyses

The following section elaborates on previous statistical analyses using more advanced statistical tests. The Mann-Whitney test is used for ordinal types of questions (i.e., Likert scale) that incorporate no more than two variables (i.e., gender = male and

female). As seen below, gender and the Likert scale responses are examined further to determine any additional statistical significance (or lack thereof) when looking at the non-parametric test of Mann-Whitney. The Mann-Whitney test was used in order to account for gender variation of two or less variables (male/female) on an ordinal scale (e.g., Likert scale).[9] The *p*-values have been pulled from the statistical outputs and consolidated into one table (see Table 22). A summary of the Mann-Whitney tests follows in Table 22.[10]

Table 22. Mann-Whitney Likert Scale (Gender): Overview of *p*-values

Question	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
***p*-value**	.601	.084	.709	.947	.745	.045	.182	.278	.678	.225	.051	.559	.440	.297	.021

When comparing male and female responses at level .05, there was only one statistically significant difference found (i.e., question # 41). Additionally, when females do respond significantly lower than males (i.e., disagree more) this uses a 1-sided *p*-value of .025. As seen in Table 23 below, question #37 shows the female "sum of ranks" as 1124, which is significantly lower than the male sum of ranks. Additionally, the mean rank for female respondents was 40.14 whereas male respondents show a mean rank of 51.94. This means that females responded to question #37 with lower ordinal responses (i.e., "1=Strongly disagree," "2=disagree," etc…). Therefore, Table 23 suggests that female participants responded statistically different than males when considering the

[9]*See* Green and Salkind, 377.

[10]For purposes of relevance, only pertinent statistical outputs and tables will be mentioned in the subsequent sections of this chapter. To view all Mann-Whitney tests related to gender responses to the Likert scale questions, *see* Appendix F: Mann-Whitney Test Likert Scale Responses by Gender.

reputation of the professor as a factor in their decision-making process. This suggests that males perceive the reputation of a professor or individual within a department or unit as more influential in their decision-making process than females.

Table 23. Mann-Whitney Likert Scale (Gender): Question #37

Question 37: The reputation of professor or individual within department or unit influenced me to select my institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q37_num	Male	68	51.94	3532.00
	Female	28	40.14	1124.00
	Total	96		

Test Statistics[a]

	Q37_num
Mann-Whitney U	718.000
Wilcoxon W	1124.000
Z	-1.951
Asymp. Sig. (2-tailed)	.051

a. Grouping Variable: Q11_num

Similarly, variation in responses to question #41 by gender was also statistically significant. For example, the mean Sum of Squares = 39.11 for females and 53.01 for males, respectively (see Table 25). In other words, the Mann-Whitney statistical test suggests that because females answered question #41 with lower ordinal measures, they consider pathways to permanent residency (citizenship) as less influential in their decision-making than their male counterparts.

Table 24. Mann-Whitney Likert Scale (Gender): Question #32

Question 32: I was enrolled in post-secondary studies when I was influenced to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q32_num	Male	68	52.06	3540.00
	Female	28	39.86	1116.00
	Total	96		

Test Statistics[a]

	Q32_num
Mann-Whitney U	710.000
Wilcoxon W	1116.000
Z	-2.006
Asymp. Sig. (2-tailed)	.045

a. Grouping Variable: Q11_num

Table 25. Mann-Whitney Likert Scale (Gender): Question #41

Question 41: Pathways to permanent residency (citizenship) influenced me to select the institution abroad because of the country in which it is located.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q41_num	Male	69	53.01	3658.00
	Female	28	39.11	1095.00
	Total	97		

Test Statistics[a]

	Q41_num
Mann-Whitney U	689.000
Wilcoxon W	1095.000
Z	-2.316
Asymp. Sig. (2-tailed)	.021

a. Grouping Variable: Q11_num

In another interesting finding from the Mann-Whitney gender test, as indicated in Table 24 above, there was significant variation between male and female responses to question #32. This suggests that disproportionately more males than females were enrolled in post-secondary studies at the time of decision-making to select an institution overseas.

Contrary to findings seen in responses to questions 32, 37, and 41 described above, responses to questions 27, 31, 33, 34, 35, and 39 show females responding with greater ordinal values than males (i.e., "5=Strongly agree," "4=Agree," etc…). In other words, this suggests that females agreed more often than males when considering the overall rankings of an institution and employment opportunities as important factors in their decision-making process. Additionally, it appears as though females were more likely than males to be in a work-related setting when deciding to study in another country. This is further understood when considering that disproportionately more males than females responded that they were in post-secondary studies at the time they decided to study overseas, which corresponds also with the data that shows more females than males as being unemployed during the time that they decided to study in the U.S. or Australia.

Kruskal-Wallace Statistical Analyses

The remaining tables employ statistical analysis from the Kruskal-Wallace test. The Kruskal-Wallace test is used when there are greater than two variables under consideration. The Kruskal-Wallis test was used in this context in order to distinguish between the four participating university responses when comparing answers to the

Likert scale questions in the online survey.[11] In order to examine further the four participating universities and how they responded similarly to and/or different from one another is central to the data analysis of ordinal measures (Likert scale). Using the statistical tests described thus far, including the Kruskal-Wallace test, allows the researcher to examine the Likert scale section of the online survey while making comparisons between the corresponding university responses in previous sections of the online survey. Similar to previous sections, not all statistical outputs and tables will be explained. To view all Kruskal-Wallis tests, see Appendix G: Kruskal-Wallis Test Likert Scale Responses by University.

As shown in Table 26 below, the *p*-values related to university comparisons of responses revealed two questions that were statistically significant (#'s 38 and 41). This suggests that the four participating institutions responded significantly different from one another when considering the perceived reputation of alumni and pathways to permanent residency (citizenship).

Table 26. Kruskal-Wallis Likert Scale (University): Overview of *p*-values

Question	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
***p*-value**	.158	.379	.402	.812	.722	.394	.641	.404	.297	.530	.861	.008	.476	.711	.005

Additionally, responses to question #30 and #37 suggest that all universities answered most similarly to one another when considering the factors of "friends

[11]Ibid., 383.

influence" and the "reputation of a professor or individual within a department or unit." This assumption can be inferred based on the *p*-values being closest to 1.

Table 27. Kruskal-Wallis Likert Scale (University): Question #38

Question 38: The reputation of alumni where I study influenced me to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q38_num	AUS-1	8	34.94
	USA-1	74	52.50
	USA-2	9	54.06
	AUS-2	6	17.00
	Total	97	

Test Statistics[a,b]

	Q38_num
Chi-square	11.939
df	3
Asymp. Sig.	.008

a. Kruskal Wallis Test

b. Grouping Variable: univ

How particular universities responded to question #38 was statistically different based on Table 27 above. The test shows a *p*-value of .008, which makes the reputation of the alumni statistically significant. In other words, universities responded differently to how they perceived the reputation of the alumni to be an influential factor in their decision-making process. Additionally, question #41 suggests differentiated university responses when considering pathways to permanent residency (citizenship) as an important factor in the decision-making process (see Table 28).

Table 28. Kruskal-Wallis Likert Scale (University): Question #41

Question 41: Pathways to permanent residency (citizenship) influenced me to select the institution abroad because of the country in which it is located.

Ranks

	univ	N	Mean Rank
Q41_num	AUS-1	8	77.50
	USA-1	74	44.49
	USA-2	9	50.83
	AUS-2	6	63.83
	Total	97	

Test Statistics[a,b]

	Q41_num
Chi-square	13.022
df	3
Asymp. Sig.	.005

a. Kruskal Wallis Test

b. Grouping Variable: univ

The Kruskal-Wallis test in Table 28 above indicates there is a statistically significant relationship between the individual university responses and their perception that pathways to permanent residency (citizenship) are influential (*p*-value =.005). In other words, whether or not a student perceived pathways to permanent residency as an important factor in the decision-making process was correlated with the higher education institution the student was enrolled in at the time the online survey was conducted. It is interesting to conclude that where a student studies is strongly associated with whether or not they consider pathways to permanent residency (citizenship) as influential due to the statistically significant variation between all four participating universities.

Summary of Statistical Tests and Analyses

The statistical data analysis presented above suggests a number of different findings. To begin with, it suggests that participants responded differently and similarly across various parts of the online survey, which depended on the particular question under consideration. Whether or not the different variables were related to one another, or if there was any statistical significance was largely due to how the comparisons were framed. These comparisons included analyses that used Chi-Square to examine particular universities and their responses to certain decision-making indicators. Tests also compared university responses with "when" participants decided to go abroad, as well as gender specific variables to help understand how various groups responded to various decision-making factors. In doing so, data analysis revealed a plethora of informative data. First, there was much variance in how participants responded to questions throughout the survey. This variation was indicated by significantly different statistical outcomes of Chi-Square, Mann-Whitney, and Kruskal-Wallis tests. Variation was also found in the form of non-statistically significant factors such as *p*-values that range from as low as .000 to as high as .999. The lower the *p*-value is to .05, the closer that particular question is to having responses that were statistically different from other group responses. As in the case of gender, the data analysis above suggests that female respondents were similar in how they responded to their male counterparts when looking at decision-making factors such as rankings, family, and friends' influence. Regarding university variation, some statistical tests captured interesting comparisons between U.S.

and Australia-based participant responses. However, further qualitative analysis is required in order to better understand the decision-making process.

Summary of Quantitative Findings

The findings from the above mentioned quantitative data analyses are interesting and informative. Notwithstanding the limitations of the low number of Australian-based survey respondents, various statistical tests were able to juxtapose different decision-making variables in order to determine statistical significance (or lack thereof). These decision-making variables were defined by indicators of reputation, country location, family and/or friend influence, and work-related opportunities. Additionally, each response to particular decision-making factors were categorized by gender and university specific groupings so as to provide a more narrowed scope for understanding how different sub-groups responded differently or similar to one another. By using gender and university groupings as a way of finding out how males, females, and various universities differed in their responses, allowed the researcher to drill deeper into the complex processes of decision-making in the context of international graduate school choice in the U.S. and Australia.

Males and females were similar to and different from one another depending on the question under examination. Interestingly, findings from the statistical tests above suggest that females responded significantly different when considering decision-making factors involving "when" they made the decision to study overseas. For example, significantly more males than females indicated that they decided to select an institution overseas for graduate school while they were still enrolled in post-secondary studies (i.e.,

undergraduate studies). Furthermore, males were significantly more likely to consider the reputation of a professor or individual within a department or unit as more influential in their decision-making process than females. The final statistically significant factor that differentiated males from females was the decision-making variable of pathways to permanent residency (citizenship). When asked whether or not they considered pathways to permanent residency (citizenship) as an influential factor, females responded with lower occurrence then males (i.e., "1=Strongly disagree," "2=Disagree," etc...). As the data suggests, males considered pathways to permanent residency (citizenship) as a more influential factor in their decision-making process than females.

The findings surrounding the four university groupings and how they responded to the online survey were quite interesting. Through statistical tests described earlier, the four participating universities allowed the researcher to compare and contrast responses to a variety of different factors in the decision-making process. For example, U.S.-based university respondents differed in their responses to the online survey when considering the reputation of alumni as an important factor in their decision-making process. U.S.-based respondents were statistically more likely to indicate that the reputation of alumni influenced their decision to study in the U.S. than Australia-based respondents. Additionally, Australia-based students were more likely to consider pathways to permanent residency (citizenship) as an important factor in their decision-making process than their U.S.-based peers. U.S.-based and Australian-based university respondents were most similar to one another in their responses in the perceived reputation of a professor or individual within a department or unit. Across all four participating

universities, prospective graduate students from India were most similar in how they viewed the reputation of the professor or department, in addition to their friends' influence. Interestingly, while not statistically significant, males were more likely to consider the reputation of department or unit than females. Moreover, most decision-making factors are not mutually exclusive from one another. For instance, males overall consider the country location, reputation of institution, and work-related opportunities as the most important factors in the decision-making process. To be sure, these three variables of decision-making are interconnected, which suggests further attention is required when understanding the complexity of international school choice at the graduate level.

Clearly, as the aforementioned data suggests, students from India choose institutions in the U.S. and Australia through a range of options and considerations. With minimal resources, students must navigate the array of options available to make an "informed" decision when selecting an institution overseas. The data presented above suggests that reputation of the institution overseas is an important area of consideration for prospective graduate students from India. One way to explore and extrapolate the murky waters of "reputation" is to identify and distinguish between overall university reputation and the individualized reputation of a professor or individual within a department or unit. Furthermore, the differences between how males and females perceive the most influential factors in decision-making cannot be fully understood based on quantitative "evidence" alone. To be sure, a much deeper investigation of the varying distinctions between gender-related perceptions and university-specific decision-making

processes will be further examined by employing qualitative investigations. As will be shown in the subsequent chapter, qualitative measurements of decision-making processes in the form of interviews will compliment and give remedy to unraveling the complexities of international choice and selection in the global market of higher education.

CHAPTER FIVE

DATA ANALYSIS: INTERVIEWS

Introduction

As discussed previously in Chapter Four, the online survey was designed to capture data on decision-making processes through quantitative and qualitative means. The open-ended questions in the survey allowed respondents the opportunity to expand upon closed-ended questions. In doing so, the open-ended responses provide a rich source of data and explanation about the decision-making processes to attend graduate institutions in Australia and the United States. As will be discussed in the following sections, qualitative data retrieved from the online survey led to the subsequent invitation of twenty students from India to participate in follow-up interviews related to their decision-making process.

In the online survey, there were a number of open-ended type questions. For example, in section I of the online survey, respondents were given the opportunity to select "none of the above" to closed-ended type questions. If a survey participant selected "none of the above" to a particular question, they were then prompted to explain "why" in an open-ended text box. Similarly, as a follow-up to the first question in the survey, participants were asked to "(p)lease explain why you selected the answer to the above question (#1). Please write 1 or 2 sentences about what is most important about

why you selected an educational institution overseas."[1] As a result, participants were able to further expand on their most important factor(s) that led to their selection process and articulate "why" they decided to pursue an educational institution overseas in their own words. While not all participants responded to the open-ended questions, the following subsections illustrate U.S. and Australian-based students' responses to open-ended type questions.

U.S.-based Reponses to Open-ended Survey Questions

U.S.-based students responded to open-ended question #3 in various ways. Question #3 asked participants to elaborate on their response to question #1. As a way of categorizing the open-ended responses to the online survey, content analysis was used in order to differentiate responses thematically. It was determined that many survey respondents were consistently concerned with the academic quality as an important reason for studying in the U.S. In particular, field of study and various "quality of life" factors were omnipresent in nearly all responses to the open-ended questions. In the following section, all responses to open-ended type questions will be analyzed from the U.S. and Australian-based student perspectives. Participants that selected "none of the above" to various questions in the online survey will be discussed in more detail in the ensuing sections of Chapter Five.

Regarding U.S.-based students that answered question #3 in the online survey, most of the responses indicated quality of life explanations to "why" they thought certain factors were important in their decision-making processes. Additionally, responses to

[1]*See* Appendix A: Online Survey for all questions included in the online survey.

question #3 were categorized into six themes: quality of life; field of study; family; financial; location of institution; and other. With respect to quality of life, this distinction is interesting because it intersects all thematic categories and can be applicable to most of the responses to the open-ended survey questions. For example, "quality of education" – as perceived by the respondent – was also one of the most important factors (i.e., field of study at a particular university) by a number of U.S.-based survey respondents, but was not categorized as a "quality of life" indicator. That said, the quality of life characteristic cited by a number of respondents included "better future and stand in life," "better living than back in India," "get knowledge at international platform," and "higher standard of living." Additionally, financial reasons were often referred to in open-ended question #3. Of the U.S.-based students that cited financial reasons for coming to the U.S. for graduate school, respondents stated "job opportunities," "help earn money in dollars," "there is good work opportunity [therefore] I will be able to find a job sooner," "there are good opportunities for me in terms of a job after the education," "ultimately good job is the only reason for further studies," and "USA has more job opportunities."[2] Interestingly, the survey was administered in May and June of 2010, which coincided with the poor economic and job climate in the U.S..[3] Yet, students often cited jobs and making more money as an underlying reason for studying in the U.S. Despite the U.S. economic downturn in recent times, it is interesting to see these kinds of "financial" reasons cited

[2]These quoted responses were obtained from open-ended responses in the online survey. All future quotations are from survey participants responses to open-ended questions unless otherwise noted.

[3]For example, the unemployment rate was nearly 10% nationally according to the U.S. Department of Labor – Bureau of Labor Statistics. Retrieved online on November 18, 2010 at: http://www.bls.gov/cps/

by students from India. Lastly, "family" reasons were cited four times by survey respondents and indicated a strong influence in their decision-making process. For example, family was important because, "I came here after my marriage. My husband is working here. So I chose this school," "my father wished that I do my masters program," "my father being Doctorate in science wanted me to get knowledge at international platform," and "my family encouraged me to study in the U.S. because it has some of the best educational institutions." While family was important to the aforementioned students, there are also other factors – namely "education" – that work in combination with family influence that push and pull students to pursue graduate-level education in the U.S.

The next open-ended question to be examined is question #7 in the online survey. U.S.-based students responded with some uniformity to question #7, which asked participants to "please explain why you chose the country where the institution is located." As indicated in Chapter Four, there were a total of 35 survey respondents that selected "country where the institution is located" as the most important factor in their decision-making process as cited in responses to question #1. Additionally, 33 of the 35 respondents went on to answer question #7, which was the follow-up question to question #1 (i.e., step-logic). There was a wide array of responses to question #7. Akin to the analysis described above in question #3, responses to question #7 were categorized into several themes that included six topics: quality of life, field of study, family, financial, location of institution, and other. As expected, students considered the above themes in terms of their perspective on how the country where the institution is located influenced

their decision to study in the U.S. As shown in Table 29 below, respondents stated various explanations that were field and country specific.[4] Students indicated the wide availability of courses and technical expertise as a major draw in the U.S. as compared to India and other countries. Pull factors appear to be the perception that the U.S. as a place to earn a degree that is "globally recognized" and the "the best for engineering." Additionally, push factors seem to be centered on the lack of options and quality higher education in India.

Table 29. Open-ended Responses – Country Where the Institution is Located is Most Important Decision-making Factor (U.S.-based)

Reasons for selecting the U.S. for graduate school
"for my field of study the universities in the United States offered, I found, a wider choice of courses"
"in my opinion, USA, offers the best in terms of technology when compared to countries like U.K., Canada and Australia"
"United States is known for institutions of high level of competence in most of the fields"
"a education system which allows innovative thinking. This is not true in India"
"this country has a high quality of education and they are well advanced then my country"
"considering the quality of education and various options available for study, I think U.S. is a great option"
"education degree earned is globally recognized the best education systems in the world"
"it is the best in any field of technology"
"the quality of education"
"learn a lot more than which could be possible in India"
"considering it the best for engineering"
"this is AMERICA"

[4]Table 29 is a summary of responses obtained from the online survey in an open-ended type format question related to where the country was located and why this was important to the respondent.

To be sure, graduate education received in the U.S. is perceived to be a primary factor for decision-making based on the above responses. Moreover, there are various push *and* pull factors that can be drawn from the statements above. The push factors include "this is not true in India," "well advanced then my country," "learn a lot more than which could be possible in India." For these survey respondents, it appears as though they were "pushed" to pursue graduate education in the U.S. due to their perception that the same education in India would not be of the same quality. Regarding pull factors, there is an obvious draw to the U.S. for the various reasons described above. The most telling pull factor can be seen in the response, "this is AMERICA," which implies a natural pull towards the U.S.[5]

In question #8 in the online survey, participants were asked to "please describe how you learned about the educational institution outside of your home country." Respondents overwhelmingly mentioned the "internet" as the most common factor that helped them learn about their graduate institution abroad. For instance, of the U.S.-based survey participants that responded to question #8 in the online survey, 59 of 84 (70%) indicated using the internet to learn about their prospective graduate institutions overseas. Respondents stated that the internet facilitated access to the websites of the institutions, websites that ranked the individual institutions, as well as "reading the forums" that help prospective students from India decide on a single graduate school to attend. To be discussed later on in this chapter, students applied to a number of institutions in the U.S, in order to give themselves options for which graduate school is best for them.

[5]Emphasis original. Survey respondent capitalized "AMERICA".

Respondents to question #8 also indicated family, friends, and "seniors"[6] helped them learn about graduate institutions in the U.S. To a slightly lesser degree than the "internet factor," word of mouth indicators appeared throughout responses to question #8. For example, 47 of 84 (56%) stated that their friends, family, and/or seniors helped them in their decision-making process. Survey respondents to open-ended type questions also indicated that the combination of both internet searches and word of mouth resources helped them in their decision-making process. Interestingly, 32 of 84 (38%) respondents stated that the internet and their friends, family, or seniors helped them learn about institutions in the U.S. Meanwhile, the remaining respondents to question #8 indicated that educational consultants and counselors in India helped them learn about graduate institutions in the U.S.

Open-ended question #9 asked participants to "please describe the most important factor that made you choose an educational institution outside your home country." For U.S.-based respondents, "quality of education" – whether overall for the institution or specific to the department – was often cited as the most important factor in their decision-making processes. Similar to the responses in question #8, there were a number of factors that contributed to their perception of "quality". For example, quality of education was important because U.S. institutions were perceived to offer "flexibility in choosing courses," "professors were working [in field] related my interests," "experience different academic culture," "better research facilities," and the overall "quality of

[6]Seniors are "co-nationals" from India that are students currently enrolled at institutions abroad. This is not to be confused with seniors that are in their final year of undergraduate studies in the U.S. Rather, seniors are graduate students enrolled in an institution abroad that can give their perspective about the institution as a whole, but also the specifics of the department that they wish to enroll, as well as other information related to studying and living in the U.S.

education abroad is better." To be sure, these statements offer a snapshot into the push and pull factors that influence students from India to study in the U.S.

In open-ended question #10, participants were asked to "please indicate any additional concerns you would like to share about your decision to select an educational institution outside your home country."[7] U.S.-based respondents to question #10 had many additional comments. These additional comments reiterated their previous answers to their decision-making process and spanned across a wide spectrum of factors. Some interesting statements made include, "research level being quite high and the availability of resources," "as mentioned before, lack of quality in educational institutions in my home country," "the experience of being away from home is different. I learn to be more independent so that I can mingle with people from all countries," "a variety of job opportunities that did not exist in my home country," "chances of getting financial aid," "the exposure," and the "general reputation that an American graduate school education is one of the best." As a result of examining the responses to question #10, there were both push and pull factors that influenced students from India to pursue graduate education in the U.S.

Australia-based Reponses to Open-ended Survey Questions

Australia-based students responded to some of the open-ended questions in the online survey. Due to the low number of Australia-based survey participants, the following responses to the open-ended questions are to be analyzed with caution. Open-ended question #3 asked Australia-based survey participants to elaborate on their

[7]*See* Appendix A: Online Survey.

response to question #1. There were three Australia-based students from India that responded to question #3 in the online survey. These students elaborated on the response to question #1 by stating, "[XYZ] university has a good reputation," "better quality of education, international exposure, more flexible options," and "priority to settle in a place where I have my network (uni [university] friends)." Interestingly, these three respondents represent the importance of reputation, quality of education, and friends in their decision-making processes. While all three statements can be seen as "pull" factors, the respondent that stated "better quality of education" alludes to the perspective that institutions in Australia are *better* than those in India. To be sure, this statement illustrates how some factors of decision-making can be viewed as both push *and* pull factors.[8]

Question #7 in the online survey asked participants to "please explain why you chose the country where the institution is located" as the most important factor in your decision-making process. Of the two Australia-based respondents that answered this question, both students indicated the specificity of their field of study as the primary reason. For example, the first respondent stated, "I choose Australia because [the] petroleum industry is booming and [there are] more job opportunities" [*sic*]. Clearly, this response can be viewed as both push and pull factors by the word *more* in the statement, "more job opportunities." The second Australia-based respondent also indicated their field as an important factor in their decision-making process by stating, "[Australia] is one of the two finalists for location where the world's largest antenna will be built. I am

[8]Emphasis added.

working in this field I thought this would be the best opportunity to be involved in that project." Since this student is studying radio engineering, it is interesting that they researched the various opportunities associated with the niche field of radio engineering.[9]

Regarding open-ended question #8, participants were asked to "please describe how you learned about the educational institution outside of your home country." In contrast to their U.S.-based counterparts, Australia-based students did not cite explicitly that the "internet" was a way in which they learned about graduate schools outside of India. Rather, Australia-based students indicated a variety of ways they found out about institutions abroad. For example, the internet, friends, family, seniors, and agencies in India all contributed to their knowledge of foreign graduate schools overseas. Perhaps most interesting in the responses to question #8 is the consultants (aka, agents) in India that helped prospective students learn about Australian universities. For example, respondents noted that, "I learned through educational agencies," "agencies which offer in depth review on overseas education," and "university road shows." All three of these mediums indicate that Australian universities have representatives in India that aid in the recruitment of students to attend institutions in Australia. These "agencies" were not cited once by U.S.-based students.

Open-ended question #9 asked participants to "please describe the most important factor that made you choose an educational institution outside your home country." While there were a variety of responses to this question, the "reputation" of the institution and the perceived "quality of education" were captured in the majority of responses.

[9]This student volunteered to be interviewed and was subsequently interviewed in-person, as will be discussed later in this chapter.

Australia-based students stated the following in response to question #8; "reputation of the university in my area of studies," "scholarships, research programs," "the department and the reputation of the department," "traveling," "reputation, value, [and] recognition of my course all over the world," "reputation [and] cost of living," "quality of research and education provided," and "very tough competition in [my] home country." All of these factors described above indicate both push and pull factors contributed to the overall decision-making process for these particular students to attend graduate schools in Australia.

In the final open-ended question in section I of the online survey, question #10 asked participants to "please indicate any additional concerns you would like to share about your decision to select an educational institution outside your home country."[10] Four students responded to question #10 and indicated that work-related opportunities, travel, and reputation were influential. For example, the four students stated that "part time work availability might be a huge factor in deciding," "it is a big decision for me, however, I didn't give much time for researching about the level of study," "traveling," "the system followed in the educational institutions is flawless," and "country, reputation, opportunity for global exposure, [and] cheap cost of living." While the above statements cannot be generalized to all students from India that study in graduate programs in Australia, it does suggest that there are a variety of decision-making factors that lead to students' choice and selection of educational institutions outside of India.

[10]*See*, Appendix A: Online Survey.

Section I of the Online Survey (None of the Above Selections)

There were two questions in the online survey that had "none of the above" as an option for respondents to select as an answer to that particular question. Questions #1 and #4 both included a "none of the above" option. Question #2 and #5 allowed survey participants to further explain why they selected none of the above. As shown in Appendix A: Online Survey, question #1 asked survey participants "which of the following statements is most important about why you selected an educational institution overseas?"[11] Regarding the U.S.-based respondents, the following statements were expressed in the subsequent follow-up question that asked students to describe their most important reason; "to get work authorization, already had masters from India," "I selected the institution based on the Graduate level courses it was offering. The courses matched my interests," and "there should have been an option of all of the above. I am here for all the options specified in the previous question and also to better the quality of my life." The first of the three responses indicated "work-related opportunities" as most important, which was an option in question #1, but the respondent felt it necessary to expand on and inform the researcher that they already had a Master's degree from an institution in India. The second statement above shows that the student selected the institution based on the specific type of courses being offered at their university in the U.S. The last statement is interesting and addresses all factors having had an impact on the students' decision-making process. With respect to Australia-based students, none of the seventeen survey

[11]*See,* Appendix A: Online Survey.

respondents selected “none of the above” to question #1 in the online survey; therefore there is no analysis of Australia-based students to question #2.

The second survey question that included a “none of the above” option can be found in question #5. Question #5 was a follow-up question to #4, which asked participants “during which of the following experiences in your life did you decide to select an educational institution overseas?” There were six U.S.-based respondents that selected none of the above, at which point they were asked to please describe when you selected an educational institution overseas? Four of the six U.S.-based respondents did not understand the meaning of “post-secondary studies” since they indicated that they decided during their undergraduate studies in the follow-up open-ended text box. The remaining two U.S.-based respondents stated, “school days were influenced by U.S. return[ed] family members with high paycheck” and “from my schooling days – high school.” Therefore, one of these students was “pulled” to the U.S. for graduate school after witnessing the return of U.S. graduates to India with higher salaries. Meanwhile, the other respondent had a pre-conceived notion of going to the U.S. since high school, which can be seen as a pull factor as well.

Of the Australia-based students that answered “none of the above” to question #5, five students provided their most important reason(s) for studying in Australia. These students indicated the following for when they decided to study in Australia; “after intense referencing on the course,” “when my job offer [made by my] company made me wait [too] long to join the job,” “because it is in middle of the semester. Then I met my current supervisor in Bangalore and I discussed my plan with her. She was happy to give

me a Ph.D. position at that moment. I left my job and joined [XYZ] university," "the course that I am enrolled in is not available in India and thus the choice to study overseas," and "I had prior experience in GPS research related application. I got an opportunity to pursue a Ph.D. in GNSS research, which I always wanted to [do]." Based on the responses above, it appears that students selected Australia for graduate school when they were given specific opportunities to study in a field that was of interest to them.

Section II of the Online Survey

As explained in Chapter Three – Methodology, there are three sections that made up the online survey. Section II of the online survey asked participants for demographic information related to gender, age, type of major, and field of study. This demographic information was presented earlier in Chapter Four – Data Analysis, Online Survey. The additional demographic questions asked survey participants "where" they completed their undergraduate studies, where they call "home," and whether or not they lived in Australia or the U.S. prior to their graduate program. In short, all of the survey respondents received their undergraduate education in India save for four students. Of the four students that did their undergraduate studies outside of India, two completed their undergraduate studies in the U.S., one in Australia, and one in Nigeria. Additionally, these four students were the same students that indicated that they had lived in the U.S. and Australia prior to their graduate studies.[12] In total, there were eight students that

[12]All of these individuals were invited for the follow-up interview, however, only the student that completed their undergraduate studies in Nigeria agreed to participate in the follow-up interview. *See* "Australia-based Interview X" below for more details on "Lakshmi's" interview details.

indicated they lived in a country outside of India, not including those that lived in the U.S. and Australia, respectively. These students lived in Bahrain, Canada, Dubai, London, Saudi Arabia, and Zambia. Not surprisingly, most of the students referred to India as "home" (91%).

Due to the wide array of responses to the open-ended questions in the online survey, twenty students were strategically selected for follow-up interviews. Students that lived outside of India were of particular interest in that they can be considered "outliers." However, not all of the survey respondents were interested in conducting a follow-up interview, which made the selection of survey respondents somewhat limited. When selecting students from India for follow-up interviews, I was able to select survey participants that represent various perspectives on the decision-making process. Ten students based in Australia and ten students based in the U.S. were invited to conduct follow-up interviews. As will be discussed in the subsequent sections of this chapter, each interviewee provides a rich source of qualitative information regarding their own decision-making processes that expand and build upon the quantitative survey data discussed earlier.

U.S.-based Interviews

The interview selection process was largely informed by the initial data retrieved from the online survey. As mentioned in the previous methodology section, at the end of the online survey participants had the option to indicate whether or not they would like to be contacted in the future for a follow-up interview related to their decision-making processes. In order to draw a representative population of students from the online

survey, students were strategically selected to represent the most dominant perceptions of decision-making processes, as well as a few "outlier" students. Generally speaking, I invited U.S.-based students that represented various perspectives on what was thought to be important factors in the decision-making process that included reputation (2), family (2), work-related (3), field of study (2), and quality of life (1). The following section analyzes the interviews of ten U.S.-based students.

The *reputation* of the institution was a common decision-making factor for why U.S.-based students selected a particular institution according to the online survey instrument. In order to learn more about reputation as a factor in the decision-making process, I strategically selected two survey respondents that represent "institutional" and "departmental" reputation perspectives. In doing so, these two students add to the quantitative data that underlines the perceived importance of overall and department specific reputation as a motivating factor for coming to the U.S. for graduate school.

Interview I. U.S.-based, Rankings (Overall)

The following excerpts are from an interview with Deepak.[13] The interview was conducted via telephone. Deepak is a Master's student studying Computer Science. He is 22 years old and studies at USA-2 University. When asked what factors most influenced him to select an educational institution overseas, Deepak responded by stating:

> Ahhh… mostly the rankings because of U.S. News and check out the rankings of U.S. colleges and which colleges have what rankings. Usually we are not able to find the rankings for department so I went for the actual ranking of the university overall. That is the main reason for choosing a

[13]Deepak is not the real name of the interviewee. In order to protect the anonymity of all interviewees, all names hereafter are not the actual names of the interview participants. This was done to protect the identity of the twenty students that participated in the interview process. All quotations that follow are from interviews unless otherwise noted.

> college here. And I also knew someone at many different universities and I ask them … ya know… how are the professors and ahhh… and are there any job prospects later on.[14]

As seen in Deepak's response it is clear that the overall rankings of the institution was most important to him when he selected his university overseas. In addition to the overall rankings of the university, Deepak also mentioned contacting students that are located at various universities in order to gain their perspective on professors as well as job opportunities. "U.S. News and World Report" is how Deepak identified the overall rankings of the institutions, which led to him applying for six different universities in the U.S.

Deepak also applied to universities in the United Kingdom.[15] When asked if he had considered any institutions outside of the U.S., Deepak replied:

> Yes I did. I also looked at universities in the U.K. as well. But it's like not the same as getting a Master's in the U.S. since it's only a 1 year program in the U.K. and I don't think it's enough time for someone to actually learn the things they would in the U.S. In the U.S. there are more programs that are 2 years and give students the opportunity to learn more. Also, saying that you studied in the U.S. to get a Master's degree is just awesome [laughs].

From Deepak's perspective, the U.K. offers Master's programs that are "only one year" and he found the two year Master's programs in the U.S. more appealing. Deepak appears to be transfixed by the reputation of not only the institution, but also the prestige

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[14]Throughout all transcripts and text referring to statements made in interviews, pauses in the interviewees response are indicated by three periods (i.e., "…"). Additionally, various descriptions were inserted throughout the text in order to clarify the interviews (i.e., "[ ]"). Also, due to the semi-structured format of the interview process, some questions were not asked of participants. In such cases, there is no text after a particular question if the question was not asked of the interviewee.

[15]Interviewees that did apply to institutions in more than one country will be noted. If there is no reference to an interviewee having applied to institutions outside of the U.S. or Australia, it can be concluded that they only applied to institutions in one location.

attached to obtaining a Master's degree in the U.S. Deepak goes on to mention how he received help from his friends to "apply to these colleges because they have a good ranking." To be sure, Deepak's most important factor is his decision-making process was the ranking of the institution, and more specifically, the overall reputation of the institution. Furthermore, he alluded to the fact that the IIT's in India (Indian Institutes of Technology) are "very selective," which has a "pushing" effect on students like Deepak to pursue graduate studies outside of India.

Interview II. U.S.-based, Rankings (Department)

In the next interview that follows, "Shrihari" illustrates how the rankings of the department are the most important factor in the decision-making process. Shrihari is a Master's student pursuing a degree in Electrical and Computer Engineering. He is 26 years old and is attending USA-1 University. The interview was conducted in-person.[16] Shrihari was very interested in coming to the U.S. for graduate school. However, he had a dilemma when he was deciding whether or not to study in the U.S. or continue working in India and possibly go to graduate school while working back home. He did, in fact, end up coming to the U.S. for graduate school and he had this advice to offer prospective students from India:

> Go according to the department. Basically you want to find out as much as you can about the university through rankings and student input that are studying there. So that's what I suggest [to prospective students] so they can make the right decision for themselves. At the end of the day you create also the best possible experience for yourself no matter what decision you have made. Contacting the professor is also a good way to

[16]An interesting cliché and aside about the in-person interview conducted with Shrihari; he was "playing cricket" when I called him to ask if he was running late for the in-person interview.

> find out about a university, but be careful about what the professor says so that you get many perspectives on the university, not just one.

To be sure, Shrihari was able to find additional information about prospective universities in the U.S. by looking at the department rankings, but also by contacting professors in order to gain their perspective on the university. Moreover, it is clear that Shrihari was interested in obtaining as much knowledge as possible about the university before making a final decision to enroll. He was able to expand the amount of information on a particular university by gathering information from multiple sources and ultimately applied to four institutions in the U.S. In addition to Shrihari's suggestion of contacting the professors at each of the universities he was interested in attending, he also advocated contacting the "seniors" currently enrolled at the institutions abroad. Shrihari explained:

> [Contact] the people that have come here [to the U.S.] especially those on social networking sites. In Asia and South America Orkut is very popular and among Indian students as well as Facebook. And ahhh… we have communities back in India where someone knows someone who has studied in a graduate program in the U.S. I also searched for Indian students who were already studying in the U.S. by shooting them an email asking them how they like it here [in the U.S.].

I then asked a follow-up question since the interviews were semi-structured and I wanted to learn more about the networking website, Orkut. I asked Shrihari, "can you explain more about these social networking sites and how you used them to help you decide?" Shrihari went on to say, "Orkut is really great where anyone can find anyone who is studying in the U.S. and you just contact them through Orkut and ask questions about academics, living situation, and anything you want to know about a school you're thinking of attending." Interestingly, Shrihari was most interested in the department

rankings of the university as the first step in finding an institution in the U.S. Furthermore, he went on to explain that there are additional perspectives that students from India should consider before selecting their institution abroad.

Shrihari epitomized what most students indicated in the interviews, as well as what they indicated in the online survey. In other words, it is not just one dominant factor that led to the decision-making process. Rather, Shrihari and others like him gathered a plethora of information from a variety of different sources in order to make a well informed decision about what institution to select (or not select).

Interview III. U.S.-based, Work-related Opportunities

It is not surprising that work-related opportunities were brought up extensively throughout the next three interviews, to be discussed and analyzed below. For many students from India, job prospects in the U.S. have a strong "pull" factor when considering graduate institutions overseas. Whether the student has a friend, relative, or someone they knew peripherally back in India, perceived work opportunities in the U.S. are important factors in the overall decision-making process. Sonali exemplified the student from India whose primary desire to come to the U.S. for graduate school is to find a good job upon graduation. Sonali is one of three females that were interviewed for this study. She applied to "five or six" universities in the U.S. and is a Master's student in Mechanical Engineering at USA-2 University. This interview was conducted over the telephone.

Sonali explained why work-related opportunities were important to her when she was considering graduate institutions in the U.S. when she stated, "I made the final

choice based on things like ahhh… you know where the college is located and after college employment kind of stuff." This statement suggests that employment opportunities are associated with "where" the higher education institution is located. This is somewhat self-explanatory in that there will be more job opportunities in urban areas vs. rural areas. Sonali went onto articulate how she saw the impact of a U.S. graduate education on people she knew back in India. For example, she stated, "there were five or six alumni of [XYZ] university who have the same background and came back to India to start their own company and so they found it pretty good that's what they told me. With that in mind this was ahhh… a university that was leading to a good thing." The "good thing" for Sonali was job prospects in the form of a startup business that looked very appealing. As a result of these perceived job prospects after receiving a graduate degree from a U.S. institution, Sonali decided to attend graduate school at USA-2 University because of the perceived work opportunities that were possible upon graduation.

Interview IV. U.S.-based, Work-related Opportunities

The next interview conducted also involved perceived work-related opportunities as a result of studying in the U.S. for graduate school. Arvind is 27 years old and is pursuing a Ph.D. in Software Engineering at USA-1 University. In total, he applied to nine universities in the U.S. and none in other countries. The interview with Arvind was conducted via telephone. Arvind was very interested in work-related opportunities when he considered going to graduate school in the U.S. He explained his decision-making process by declaring that "there are maybe two reasons. I wanted to pursue my Ph.D. and

the other reason is I was interested in working ahhh… in the U.S. during and after my studies in the software fields." It is interesting that Arvind highlights work-related opportunities "during and after" his academic program in the U.S. Clearly, he was already well aware of the various work opportunities to pursue while enrolled in graduate school, and the job prospects that exist upon graduation. Curricular Practical Training (CPT) is a way for F-1 international students in the U.S. to pursue full-time work while pursuing a graduate degree. Additionally, Optional Practical Training (OPT) is an employment program for F-1 international students that wish to work in the U.S. upon graduation.[17]

Arvind went on to discuss the importance of receiving scholarships to help subsidize his studies in the U.S. For instance, Arvind explained:

> It was also the financial factor. I am not coming from a very rich family so … ahhhh… I really wanted to make sure I was able to make good money after I graduated from my Ph.D. program. I had to… you know… look at uni's [universities] that offered a good amount of scholarships when I selected the final institution to attend.

I then asked Arvind if he was "offered scholarships and financial aid and did this help you decide which institution to attend?" Arvind responded, "yes… there were several uni's [universities] that offered me aid and this was the average amount and most institutions that accepted me offered me a good amount of scholarships in the form of tuition." To be sure, Arvind was primarily motivated to attend graduate school in the U.S. because of work-related opportunities during and after his studies. In addition, it

[17]Find more information about CPT and OPT policies online at the U.S. Department of Homeland Security's Citizenship and Immigration Services website. Retrieved online on October 23, 2010 at: http://www.ice.gov/sevis/students/cpt.htm

was also very important for Arvind to receive some type of financial aid package so that he could afford the costs associated with attending U.S. graduate institutions.

Interview V. U.S.-based, Work-related Opportunities and Field of Study

While the previous interview focused primarily on work-related opportunities and U.S. institutional aid in the form of scholarships, the following interview is categorized by work and by field of study. Mohan was a Master's level student pursuing a degree in Electrical Engineering at the time the interview was conducted. Mohan is 22 years old and applied to six universities in the U.S. before deciding to attend USA-2 University. The interview with Mohan was conducted in-person. When asked what the most important factor was in the decision-making process, Mohan explained:

> I am in the field of power systems and the United States is a huge power market and you can buy or sell power. Now we don't even have that situation in India so the power situation in the U.S. is way more advanced than India. That was one of the main factors, so I thought if I do an internship for one year maybe after about 10 years when the same technology comes through India I would get a very nice job back there in India. That was the main factor.

Undeniably, it can be said that Mohan was *pulled* to the U.S. based on the field of study, but it can also be said that he was *pushed* to the U.S. because of work-related opportunities. As he explained, Mohan has every intention of returning to India to apply his expertise of power systems back to his home country. In doing so, his plan combines getting a "very nice job" with the expertise that will be obtained from the combination of conducting an internship in the U.S. alongside his graduate studies. When asked if he had any suggestions for prospective graduate students from India who wish to pursue studies in the U.S., Mohan responded by saying:

> Of course I would recommend that they come to the U.S. The only thing was when I was coming here I was not aware of the economic situation here so no one in India knew about the economic downturn in the United States so I was expecting to have a job by one year, but that is not the case. So I would just tell anybody who wants to come here that it's not so easy as you think it is. Ya, but as far as the United States is concerned there is no better place to receive an education.

Interestingly, work-related opportunities are not as prevalent as Mohan expected before he came to the U.S. for graduate school. Yet, as he mentioned above, the education received in the U.S. is the best.

Interview VI. U.S.-based, Field of Study

The next interview focused mainly on how the field of study can influence a student's decision-making process to attend graduate school in the U.S. However, like many students from India, there is a mixture of reasons that ultimately motivate the individual to pursue graduate school in the U.S. Shivani was mostly interested in her chosen field of study when considering graduate schools overseas. Shivani is a Master's student at USA-1 University and is pursuing studies in Food Processing Engineering. The interview was conducted via telephone. Shivani explained why she applied to six universities in the U.S. by stating, "the United States has the best infrastructure for food processing. I mean for the academic ahhh… side the universities here have a good faculty – the faculty here in the U.S. in food processing are the best in the world." Shivani explained that the U.S. is ideal for her since her major focus is food processing and the U.S. has the best in terms of practice and theory. Additionally, Shivani went on to state:

> My field of education is not offered currently in India. I am studying Food Processing Engineering. And ahhhh… Food Processing Engineering is a

> very new concept in India. Because you know the food habits in India are not what it is here in the United States. The processing technology is totally different so when I wanted the best education for this specific field of study and I feel the United States is the best ahhhh… academic focus on food processing.

It is interesting to consider Shivani's field of study as mainly a *push* factor in her decision-making process. For example, because food processing engineering is not offered in India, Shivani was limited in academic options, which can be interpreted as a *push* factor. Additionally, the advanced technology and innovation in the U.S. as it relates to food science can be seen as a *pull* factor in Shivani's decision-making process. Lastly, a very interesting comment that Shivani divulged in her interview was the fact that she considered institutions in Australia as well as institutions in the U.S. Shivani explained that, "I did actually ahhhh… had Australia in mind, but ahhhh… the United States was actually more easier for me to get to since Australia had many restrictions for obtaining a visa whereas the United States did not in my case." From Shivani's perspective, it was easier to go to the U.S. than to Australia for graduate studies because of the perceived visa process, which eventually led her to apply to five universities in the U.S. and none in Australia.

Interview VII. U.S.-based, Family

One of the most interesting findings from the online survey was the fact that "family" was an outlier when considering the most important factor in the decision-making processes of students from India. Isha was an exception to the survey respondents and viewed family as the most important factor in her decision-making

process.[18] Isha is a Master's student at USA-1 University pursuing studies in Computer Engineering. She is 25 years old and applied to three universities in the U.S. The interview with Isha was carried out over the telephone. When asked what was most important in her decision-making process to attend graduate school in the U.S., Isha responded by stating that, "basically like my father has a doctorate and because of his influence he wanted me to go abroad and get exposure at the international level so he suggested me to go for a … ya know… a higher degree option." Clearly, Isha's father had a strong influence on her decision-making process. Additionally, the "exposure at the international level" is something that was cited in the online survey from several individuals.[19] For Isha, family was certainly an important factor, but she also alluded to the fact the seniors helped her gather more information about schools in the U.S. For instance, Isha explained that she "talked to my seniors that were already here and they suggested come over here for graduate studies." However, when asked if she would do anything differently if she could, Isha went on to state:

> I would definitely talk to more students about the pros and cons of attending their university like living arrangements and academics before attending. And all the factors really need to be discussed with the seniors [currently enrolled students] so that you can get a better idea of what life will be like if you decide to study there. And then talk to your parents after you have gathered all the information and see what they think.

Therefore, in addition to the influence of her parents on her decision-making process, Isha suggested that prospective students talk with currently enrolled students (i.e., "seniors") first in order to get as much information about a particular school as possible.

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[18]As an outlier survey respondent, Isha was selected precisely for her view that family was the most important factor in her decision-making process.

[19]In total, twenty-three survey respondents indicated some reference to "international exposure."

Interview VIII. U.S.-based, Family

The next interview that represents another perspective on family influence on the decision-making process was conducted with Nishant. Nishant is a Computer Science major at USA-2 University where he is pursuing a Master's degree. Nishant is 24 years old and the interview was conducted in-person. Interestingly, Nishant applied to twelve universities in the U.S.[20] He did not apply to any institutions outside the U.S. Nishant explained how his family was the most important factor in his decision-making process by stating:

> Obviously my family had a lot of influence because they're the ones that fund my education. So ya I mean when they saw all the universities I applied to [and] they considered all factors with me. I mean they even considered the universities that I wanted to look at. They never forced me to say 'pick this university' because they liked it, so there was an online chat and even students here [in the U.S.] plus some people here from the International Student Services Center [staff in the U.S.] and I had two chat sessions and everyone here was telling us welcome and what you can expect when you come here so that was one thing that we really considered and my family looked at all different factors. Frankly, Chicago is not a very safe area you hear of a lot of muggings and stuff and it's very hard in terms of weather. But let me tell you at [XYZ and XYZ and XYZ] university where I also got acceptance letters the weather in each of these places was pretty good, but in terms of rankings and the feedback I got from there it wasn't so good so ya I mean there are a lot of factors ummm ... friends, well ummmmm I wouldn't say that friends had anything to do with it because of the fact [that] most of my friends were pursuing management studies so they would not have that much knowledge about here. The seniors helped me out and told me about how they feel about what kinds of opportunities are available but in terms of friends back home most of them are going into management.

Interestingly, Nishant's family was very involved in the decision-making process. Furthermore, the rankings were not important in the decision-making process, in addition

[20]Twelve universities was the most any student applied to when considering graduate school overseas.

to the weather at a particular university. Nishant also mentioned the influence of "seniors" on his decision-making process, at which point I asked him to elaborate. For instance, I asked Nishant "when you say 'seniors' what do you mean by that exactly?" Nishant explained the definition of seniors by stating:

> They [seniors] are students that are part of the program here [in the U.S.] and students and residents from India are here [in the U.S.]. I mean [they are] people coming here from where I live I asked them to see you know [laughs] to see if the weather is really as harsh as it is portrayed or whether I will die if I come here?!

While family influence is important to Nishant in his overall decision-making process, he also believed seniors helped him as well. Additionally, Nishant also mentioned how rankings were a factor and said, "the U.S. News Ranking I looked at that I mean that's like the place where you go see where institutes rank according to the department and currently the [XYZ] department of [XYZ] university has a very good reputation online in U.S. News and everyone usually says to go according to that." As a result, Nishant was influenced by several factors, in addition to his family influence, and when combined all these factors contributed to his overall decision-making process to attend graduate school in the U.S.

Interview IX. U.S.-based, Quality of Education

The next "theme" retrieved from the following interview examines what many of the survey respondents indicated as an important factor in their decision-making process; *quality of education*. Rajesh is a Ph.D. student at USA-1 University where he is enrolled in Computer Science. Before settling on USA-1 University, he applied to five different universities in the U.S. Rajesh is 26 years old. The interview was conducted in-person.

Rajesh explained why quality of education was an important factor in his decision-making process by stating:

> Well there is definitely the quality of education ummmm not just the teaching but the availability of resources. Like for example, the library resources that you have here not just [XYZ] university libraries, but ya know all of [XYZ] libraries and really all world libraries, but fairly often I hang out a lot at the [XYZ] library.

For Rajesh, the quality of education was not only measured by teaching, but also the availability of resources, like that of library resources. Additionally, Rajesh went on to say that he was considering attending graduate school in India or the United Kingdom, but that obstacles arose that prevented him from pursuing these other country options. For instance, Rajesh stated:

> There are far fewer universities [in India] so again because of the quality differential ahhh so ones that would be worth going to there are very few and there is ahhh there is an exam called the GATE, which ahhhh if you're going to graduate school in India in engineering then that's the exam you have to take. And it's not an easy exam let's say [laughs]. Cause it aims to test for amount of factual information so it's totally different from the GRE or GMAT.

To be sure, Rajesh perceived the entrance exam, GATE, which is required in order to get accepted into engineering schools in India as too difficult and too competitive.[21] Furthermore, Rajesh explained the attractiveness of pursuing graduate school in the U.S. by saying:

> There is the flexibility [in the U.S.] also so more and more my research area has changed and now it's looking at social networking and have studied a fair amount of sociology and other disciplines as well. And this stuff is unimaginable in India. This sort of interdisciplinary thing, or that I have taken classes at [neighboring institution] just isn't possible in India

[21]GATE stands for the Graduate Aptitude Test in Engineering. Find more information on the following link. Retrieved online on September 17, 2010 at: http://www.gate.iitb.ac.in/gate2011/index.php

and these are the things that are appealing to me.

The above statement can be described as both *push* and *pull* factors in Rajesh's decision-making process. To be sure, top Indian institutions are very difficult to gain entrance (i.e., push factor) and the interdisciplinary nature of U.S. graduate institutions was very appealing to Rajesh (i.e., pull factor). Additionally, Rajesh went on to mention how the cultural melting pot in the U.S. was a large draw because "you could go to a university in Germany or a university in England and not have as much of a diverse ahhhhh… pool as you get in the United States." For Rajesh, this cultural diversity adds to the overall experience acquired in U.S. graduate institutions that ultimately led him to pursue five different universities in the U.S. Therefore, it can be determined that Rajesh had several important factors that impacted his overall decision-making process.

Interview X. U.S.-based, Quality of Life

The final U.S.-based interview to be discussed examines "quality of life" as an omnipresent theme and motivator for students to pursue graduate school in the U.S. One of the underlying factors that respondents throughout the survey mentioned was a notion of a better quality of life as the main reason for deciding to study in the U.S. Not only does studying in the U.S. imply that you are going to get a good education, a good job, etc…, but it also implies a better overall quality of life. Ravi exemplified this quality of life indicator as a theme and explanation for why he pursued graduate school in the U.S. Ravi is pursuing a Master's degree in Computer Engineering at USA-1 institution. He is 24 years old. Ravi applied to approximately six universities in the U.S. before deciding on USA-1 University as his final choice. Ravi's interview was conducted via telephone.

The quality of life factor is captured in Ravi's response to the interview question that asked what factors influenced him to pursue graduate school in the U.S. Ravi responded simply, "the U.S. is the best. The land of opportunity." The U.S. has often been referred to as the land of opportunity and can arguably be interpreted as increasing one's quality of life. From Ravi's perspective, "if I get a Master's degree from the U.S. I can get a good job and ya know… make a lot of money, which is a lot more than I used to make back in India before I came here." One way of defining the enhancement of one's quality of life is to consider the impact of earning more income. This explains why Ravi considers the U.S. as the land of opportunity, which translates into the quality of life theme. Ravi articulated his reasoning for coming to the U.S. in a clear way in the following statement, which most definitely aligns with the quality of life distinction. For example, Ravi concluded the interview by stating:

> I think … ahhhh… it's … for me about quality of living. I mean… if I make good money I can buy a house and pay for things I would not be [able to] back in India. Maybe I go back to India someday after I make lots of money, but I like life here [in the U.S.] so how can I give up a good life really? Ya know?

The quality of life dimension surrounds all of the decision-making factors discussed in most of the U.S.-based interviews above. The difference in Ravi's case is that he articulated this dimension in such a way that he believes that a "good life" is eminent since he decided to study in the U.S. Moreover, it is clear that Ravi's mode of thinking led him to pursue graduate school in the U.S. as a result of his decision-making process that is founded in improving his overall quality of life.

Australia-based Interviews

The Australia-based students offer an interesting comparison with their U.S.-based counterparts. In the sections that follow, ten Australia-based students and their interviews will be analyzed thematically according to their most important factor(s) in their decision-making process.

Interview I. Australia-based, Field of Study

Australia-based students were interviewed via telephone, Skype, and in-person. The first interview to be examined is Karthik.[22] Karthik is a Master's level student pursuing Oil and Gas Engineering at AUS-1 University. Additionally, Karthik is 23 years old. Karthik's interview was conducted via Skype, which is free online software that allows free calls between computer-to-computer users.[23] Karthik applied to a total of three universities in Australia and expressed that he did in fact consider the U.S. for graduate school. Karthik explained that:

> the main reason I chose an institution abroad was because the course I am doing is not there in India. I did not have oil and mining programs in India so I had to locate a course outside of India. Australia ummmm… is just more feasible and ummmm… it was easier to come here than it was to the States.

Contrary to Shivani's interview – U.S.-based interview VI above – Karthik perceived the U.S. to be more difficult to attend graduate school than Australia. He went on to say that "the U.S. was more expensive" and that "courses were not clear and I wouldn't have been able to take my post-graduate course [in my current program]." Karthik also considered

[22]Similar to the U.S.-based interviewees, alias names were created to protect the identity of all Australia-based interviewees.

[23]For more information about Skype, click on the following link. Retrieved online on September 17, 2010 at: http://www.skype.com

institutions in Europe, but concluded that there "was a language problem." Karthik's field of study is oil and mining engineering and he believes that Australia is the best country to pursue his graduate studies because of the specificity of his major. Additionally, Karthik elaborated on why he chose Australia by declaring, "I knew someone who had the course before so I ahhhh… I knew that my friend recommended the program so I knew it would be good and that's why I chose Australia." It is interesting to note that both field of study and his friends' influence helped Karthik in his decision-making process that resulted in a combination of factors to be most influential. Furthermore, Karthik's field of study *pushed* and *pulled* him to search for programs outside India due to the specific nature of his chosen field of study.

Interview II. Australia-based, Field of Study

The next interview also focused on the field of study as the main factor for attending an Australian institution of higher education. Praveen is a Ph.D. student in Mechanical Engineering at AUS-1 University. Praveen is 29 years old. The interview was conducted in-person. Praveen was so focused on his field of study that he "applied to a few [universities] in Canada, a few in Australia, and in Europe I applied to three institutions in Germany and one in Switzerland." Clearly, Praveen examined all of his options at the Ph.D. level and did so regardless of the location of the country. Praveen explained further that the country where the institution is located and Australia in particular wasn't the biggest factor in his decision-making process. Rather, it was the specific field of study that was most appealing about AUS-1 University in Australia. For

example, Praveen postulates that “it wasn’t Australia in particular it was just to work in a related field and what I have learned would elevate to the next level with the Ph.D..”

Clearly for Praveen, the field of study was more important than the actual country where the institution was located. This led him to pursue graduate school in Australia. Furthermore, he was also influenced by his previous professors from India where he completed his undergraduate studies whom pursued him to select a Ph.D. outside of India. Praveen explained that “my professors and senior people, they helped me a lot. So my professors would always help me and guide me.” In doing so, Praveen adhered to the advice of his mentors and selected a graduate program in Australia mainly because of his field of study, but also because of the influence his previous professors had on him.

Interview III. Australia-based, Rankings

One of the most interesting interviews with respect to the Australia-based students was the following interview with Gita. Gita is a Master’s student at AUS-2 University and is studying Computer Science. She is 23 years old. The interview was conducted in-person and revealed a number of interesting findings. One interesting finding from the interview with Gita was that she originally applied to three universities in the U.S. Gita explained, “my aim was to go to study at [XYZ] university in the United States. Ahhh … but ahhh… getting a visa I need to write the GRE exam and there are a lot of steps.” According to Gita, there were too many barriers to pursue graduate school in the U.S. and she would have needed to take the GRE exam in order to study in the U.S. Another interesting point that came up during the interview was that reputation of the institution was important in her decision-making process. For example, Gita explained that AUS-2

University is a top school and that, "[AUS-2] is most popular and it's one of the Group of Eight. My focus is research so ahhh….and [AUS-2] is more research intensive … so ahhhh… I thought I am on the right track." The Group of Eight are considered the "Ivy League" universities of Australia, therefore it can be determined that rankings were an important consideration in Gita's decision-making process.[24] Another interesting point raised by Gita was after I asked her what was most important in her decision-making process. She reiterated that reputation was most important, and then began to explain that "I heard Sydney and Melbourne are very saturated and you can't get any job and there are some problems there in Melbourne." In response, I asked Gita to please explain what she meant by, "problems in Melbourne." Gita responded by stating, "I'm not sure about that, but it's all over the media, but I don't know what's really happening there [laughs]. It's like ahhh… when in India, when I was applying to [AUS-2 while] in India I get a lot of media news that Indians are being attacked in Australia so… but I'm not sure if that's real or not." Gita referred to the racial attacks on students from India in Melbourne that have been covered by media outlets all over India, the U.S., and Australia.[25] Based on Gita's comments above, it appears as though she did not pursue graduate schools in Melbourne because of the perceived violence and attacks on students from India in recent months.

[24]For more information on the Group of Eight, click on the following link. Retrieved online on October 2, 2010 at: http://www.go8.edu.au/

[25]See previous sections of the dissertation for topics related to racial attacks in India.

Lastly, and perhaps most interesting, Gita revealed during the interview that IDP agents recruited her to come to Australia for graduate school and that she felt "manipulated" by this individual.[26] Gita went on to explain:

> Ahhh. You know what. Ahhh… after a few days after coming to [AUS-2] university I feel like I have been cheated by IDP [laughs]. Seriously because they told me it's a wonderful place and that there will be plenty of job opportunities ahhh… because I left my job in India and I traveled all the way here, but after coming here that my IDP agent manipulated me and ahh… and he cheated me to select [AUS-2] university. For instance, I applied to ahhh… for Australia [student] visa, but it took very long process and I wasn't able to get my visa in time and ahh… but what IDP said was they sent me a new offer letter and asked me to sign just for a formality, but their policy stated that I have to pay a higher fee ahh… but I didn't realize this and I asked them deliberately that the second offer letter has a higher fee, and should I sign this and join and they convinced me that it's not a big deal and that ahhh… that it's just a formality and you'll be going to Australia during the same in-take and ahhh… so the same fees would apply. After being in Australia my school told me that I didn't pay my complete fee and they said my fee is updated and ahhh… ya it was a lot of disappointment with me [laughs] for IDP because I don't… I will not recommend anyone to come to Australia through IDP [laughs]. It was about a $3,000 difference and I don't know why they do this and ah… before me coming to Australia they should've said to me that ahhh… the fees updated so that I can make the arrangements or else I would've [gone] to some other university so … ya… ah… [laughs]… to make this point the IDP agents are trying to get more students to other foreign universities and I think they are getting some commission or something like that if they… ahhh… get more students from India ah… [laughs], but I'm not sure they are doing something wrong.

The negative implication of agents in India was a very interesting discovery. Moreover, according to Gita, she was blatantly lied to by the agent in India in order to convince her to study in Australia. As discussed in the literature review chapter, Australia is known for its "aggressive" recruitment strategies. To be sure, this is a good example of the

[26]One major function of IDP is the recruitment of foreign students to attend Australian institutions of higher education. Find more information about IDP on the following link. Retrieved online on October 11, 200 at: http://www.idp.com

recruitment of students from India who, rightly or wrongly, feel as though they were "cheated" and not told the full truth about their admission status into universities within Australia. Interestingly, there are two other students that were interviewed that also gave similar experiences with "agents" in India that attempt to recruit students to come to Australia. This topic will be discussed further in the coming sections of the study. Therefore, for Gita, it is clear that she ultimately decided to select Australia for graduate school based on the rankings of the university, but also because she was pursued by an agent in India to go to Australia.

Interview IV. Australia-based, Rankings (Department)

The next interview was conducted in-person and examined the rankings of the department as an important factor in the decision-making process. Vijay is a Ph.D. student studying Computer Engineering at AUS-1 University. He is 30 years old. When asked why he selected an education institution overseas, Vijay replied:

> you know when I finished my postgraduate ahhh… when I was doing my Master's in India because I am from India… and after ahh… finishing my Master's I was working as a software professional in Bangalore [India]. When I was working ahhh… I felt that you know I was majoring in software engineering and computer so I thought it is instead of a green job industry if I go to Ph.D. I want to learn something more than what I was doing in my job. So [that was the] first thing that basically drives me to do a Ph.D. and next thing is that at that time I met my current supervisor in Bangalore and ahhh… she told me that she was working in Britain you know in computer science related something like robotics computation and I was influenced to do that kind of stuff. That's why when she asked me to join her group then I decided okay, let's go and do it.

Clearly, Vijay was well connected within his field while in India and was then persuaded by his supervisor to pursue a Ph.D. in a related field in Australia. In doing so, the department – and more specifically the research opportunities within the department – is

most important to Vijay, which ultimately led to his doctoral studies abroad. In addition, Vijay noted that, "I get that the computing department is quite good here and they are quite knowledgeable and ahh… really encourage [me] to explore many things related to my research interests." As a result, Vijay decided to pursue a Ph.D. in Australia for the research opportunities that relate to the reputation of the department, as well as the encouragement of his mentor. In this way, Vijay was *pulled* to Australia by his contacts within his field of study that related to his research interests.

Interview V. Australia-based, Money

The following interview was conducted over the telephone. Shankar is a Master's student in the field of Oil and Gas Engineering and is 23 years old. He applied to four institutions in Australia finally deciding on AUS-2 University to pursue his graduate studies. Shankar is very straightforward. In fact, it was by far the shortest interview of both the U.S. and Australia-based students. The most important factor that led Shankar to select an education institution in Australia was because of "money." Shankar explained his reason to attend AUS-2 University by claiming that, "I came [to Australia] because I … so I invest in my future by paying for education that will help me make more money … so… ya. That's why."

Clearly, Shankar is pursuing a degree in Oil and Gas Engineering in order to make money upon graduation. Additionally, Oil and Gas Engineering is not offered in India, which is another reason for coming to Australia to pursue graduate school (i.e., push and pull factors). Shankar went on to explain that he looked at similar university programs outside of Australia and that, "I looked at many schools all over the world. I

looked at the U.S. schools and the U.K… ahhh… but you know I chose Australia because ahhh… they were better and not as expensive as the schools in other places. The U.S. is most expensive." In short, Shankar applied to four universities in Australia due to the lower cost of attendance and cost of living with the intention of making lots of money upon graduation. Furthermore, Shankar was pushed to pursue a graduate program outside of India because his field of study was not offered by Indian institutions of higher education. Meanwhile, he was also pulled to Australia due to the course offerings that were specific to his academic goals.

Interview VI. Australia-based, Money

It is interesting to note from the outset that the following interview was conducted in-person. The previous interview above regarding "money" as the most influential factor in the decision-making process was conducted over the telephone, which may have resulted in the brevity of the interviewee's response. As will be seen in the following interview with Hari, he responded in greater duration than Shankar above. Hari is a Master's student in Oil and Gas Engineering at AUS-1 University and is 24 years old. Hari applied to two universities in Australia since he was sure he wanted to study Oil and Gas engineering. Interestingly, Hari explained why he selected institutions in Australia by stating, "I decided Australia would be better in terms of jobs… ahhh… because well the U.S. … people would say it's already saturated so [laughs]… what's the sense of going there?" Hari considered the outcome of his graduate education as the main motivating factor for his decision to study in Australia. Hari explained why he chose Australia and provides a glimpse of his origins in Saudi Arabia and how this connected to

his career path. Hari stated that, "I spent half my life in the Middle East [laughs]… and the other half back in India and so… cause I was pretty much … well I thought I would go to the U.S. or Australia and I ended [up going] with Australia". Hari later elaborated on the fact that his father is in the oil business and encouraged him to pursue the same career path. Prior to his graduate school pursuits, Hari was seriously considering going to Canada for his undergraduate studies. Yet, Hari did not end up going to Canada because he was given advice to do his graduate work abroad and not his undergraduate studies. Hari explained further his decision to study in Australia:

> a lot of people put pressure that it isn't advisable to do your undergrad abroad, but do your post-grad abroad, but by the time I finished my undergrad… ahhhh… in India, I did get a job as well and ahhh… you know there are a lot of agencies out there in India and ahhh… they just called me and said like we thought you were interested in going overseas and how about now? And then [laughs] I thought okay, how about I give it a try again. Ahhh… and then they said Australia is a very good place for oil and gas and I thought okay, oil and gas might be the best option for me because my background is in mechanical engineering and I thought that might help with the building and stuff.

As Hari alluded to the fact that he was under a lot of pressure to not do undergraduate studies in Canada. Furthermore, it appears that Hari was recruited to attend graduate school in Australia by "agents". He then spoke more about the agents and other issues related to his decision-making process by stating:

> And then ahhh… checking out websites … well there was this website called hays.com.au which does some kind of review of jobs and salaries and employment rates and stuff … so… I downloaded a couple of files and saw that oil and gas have a lot of opportunities, a high salary, and good employment rate and stuff like that… and ahhh… so … I thought okay Australia is a good place for me, but then… [laughs] things changed as soon after I came here the recession hit [laughs] and then… [laughs] so I'm just hoping by the time my studies are done it will be back to normal. Ummm… I did a lot of research before deciding to come to Australia

> because ahhh… even though I was well informed I still felt as though I wasn't all that informed because you learn a lot of things when you come here regarding rules and job and stuff like that. Back home, your agents just tell you that it's a good course go for it, that's it. They don't say anything about how you will live here.

I then asked Hari to help me better understand the "agents" and who he was referring to specifically. Hari explained that, "it was an agency called Global Educational Consultants [GEC]. The reason why I went through this agency is because some marketing guy from [AUS-1] university was in my city in India and he came through GEC. So I could go face-to-face with him to learn more." Clearly, AUS-1 University markets their programs in India and work with agencies on the ground in India for recruitment purposes. Hari explained that getting a good job that earns a lot of money is important to him. Hari said that the following was most important to him, "job and money. Because when you graduate the first thing you look for is a job and a job with a lot of money. And then comes the rest of the things [laughs]. So I was willing to take a risk to do this course, which would give me a job probably in the future." For Hari, and perhaps many of the students involved in the interview process, earning a good income is one of many goals after finishing graduate school abroad. Hari was comfortable with this fact and was not afraid to share his perspective on making a lot of money and retiring at 45 years old. To be sure, Hari was most influenced by the prospect of earning a lot of money, which eventually led to his subsequent decision to study Oil and Gas Engineering at a higher education institution in Australia.

Interview VII. Australia-based, Friends and Reputation of Department

The following interview was conducted in-person. Govind is pursuing a Ph.D. in Radio Engineering at AUS-1 University. Govind, who is 29 years old, applied to a total of six universities before deciding on AUS-1 University in Australia. He considered two institutions in Australia, two in Germany, one in England, and one in the U.S. Govind ultimately decided that Australia was best for him because, "the field I am working on was not pursued back in my home country. It was very field-specific for me since this wasn't offered back in India at a high quality level." Govind went on to say that:

> Basically there is this big radio astronomy antenna that was proposed to be made and ahhhh…. The final sites are South Africa and Western Australia and because of that …. Ahhhh… my current boss, my PhD supervisor was the project engineer for the entire antenna project but then he stopped that and ah…. Because you know it requires a lot of traveling to be a project engineer and then he started this new project at [XYZ] university which is why I came here to work under him specifically. Ya so that was my first choice university because of the professor.

To be sure, Govind closely monitored where the radio antenna was going to be built, ultimately effected his decision to study in Australia. Furthermore, he was *pushed* to pursue his field of study outside of India, because Indian institutions did not offer his specified course. Meanwhile, he was also *pulled* to Australia due to his connections with various individuals involved in research projects that he was interested in pursuing. Govind went on to explain further his connection to the radio antenna project:

> the antenna project is one of the 2 grand final sites here and [AUS-1] university is teaming up with [AUS-1] university to work on this project. So I will then have the experience working on a global project in collaboration with many universities since it's a huge project. So… ya… the other thing that I found out later that should've been a part of my decision-making process was that the facilities here are better than [XYZ] university in terms of engineering. Also, in India you don't get to do these

> practical type of things specifically because there is a strong distinction between those that work in technical and people that work in simulation.[27]

It was important for Govind to work on a collaborative project that he was interested in. Additionally, according to Govind, institutions in India conduct theoretical simulations and not actual hands on learning and therefore never had the opportunity to perform the practical experience he desired. Additionally, friends of Govind helped him pursue graduate school abroad. Govind explained how his friends helped "push" him to study in Australia:

> I was stuck back in India working on this odd ball project that I was halfway through and it was not showing any promising results, but you know… I had started the project so I was more than 6 months over my expected time on the project and that's when my friends told me I had to go outside of India and cut it here, it's not going to work here because as I said the quality of education in that particular field was not pursued very highly. And they sort of pushed me into going out abroad and I was very happy to leave India at that time.

For Govind, working on a unique "hands-on" research project in a department within AUS-1 University, coupled with the motivation from his friends back in India combined to be the most important factors in his decision-making process. These factors ultimately led Govind to pursue his doctoral studies in Australia.

Interview VIII. Australia-based, Friends

The following interview with Satya was conducted via Skype and captures the influence of friends on the decision-making process of attending graduate school overseas. Satya is a Master's student in Computer Science at AUS-1 University. Satya is 24 years old and applied to three universities in Australia. It is very clear when reading

[27]"XYZ" university was not mentioned due to the fact that it is out of the scope of this study.

the transcript of Satya's interview that she decided to study in Australia because of her friends. For example, Satya stated that "my friends were here and we live together now and that is a good thing … they helped me pick Australia." Satya went on to say that:

> I think everyone should go study overseas to learn about different stuff and meet different people. I am from a small village and when my friends wanted to go I thought I could go too so that's important to have friends that will help you make your choice … where you want to go. Ahhh… ya know?

As a result of her friends' influence, Satya decided to pursue a Master's degree in Australia. This is an exemplary case whereby "word of mouth" had a profound effect on where students from India go when considering graduate institutions overseas. In addition to her friends' impact on her decision-making process, Satya also mentioned that her family – namely her father – had an influence on her. Satya informed the researcher of this influence by stating:

> Well… my father is always telling me to go out there and do something and so I did. He helped me in many ways you know… like paying for me to be here [laughs] and … ahhh… helping me understand the importance of a Master's degree in helping me start my life. I am very close with my family so that is important to me.

Satya's most important factors in her decision-making process were her friends' and father's influence. Thus, she pursued after her friends and in many ways was *pulled* by her friends to study in Australia. Futhermore, her father *pushed* her by encouraging her to pursue graduate school outside of India.

Interview IX. Australia-based, Family

The following interview is a more clearly defined case whereby "family" was most influential in the decision-making process. Mandip was interviewed via Skype. He

was enrolled in Civil Engineering at AUS-2 at the time the interview was conducted. Mandip is 22 years old and applied to four institutions in Australia. Mandip explained why he chose Australia by stating, "my father really influenced me to study here and I wanted to come here and see for myself what it would be like." Mandip went on to say that he "liked Australia because my cousins came here and told me it was good. That's why my father said he wanted me to come here because my relatives and they were living here already so that helps a lot when it comes to having family close." It is apparent that Mandip's father had an extraordinary influence on his decision-making process. Mandip also cited work-related opportunities, but this factor was also tied to his cousin's experience. For example, Mandip gave the explanation that, "my cousins have jobs and I want a good job too [laughs] so ya … ahhh… my cousins have really good jobs and I hope to get one too [laughs]." While family certainly influenced Mandip, he had an interesting "suggestion" for prospective students in India that are considering institutions overseas. Mandip stated that "it's really your own decision to study and go somewhere different and if you want to go, just go, don't let anyone tell you ah… you can't do it because you can. Ummm… ya, so … if you can go, do it." Perhaps this statement is some type of subconscious output that stems from his father's influence on his own decision-making, but we can only make the assumption that he is happy with *his* decision to study in Australia.[28] To be sure, Mandip's most important decision-making factor was the influence of his family to pursue graduate school in Australia.

[28]Emphasis added.

Interview X. Australia-based, Family

While all of the interviewees were strategically selected based on their survey responses, the following interview was of particular interest. This interest stems from the fact that Lakshmi "grew up" in Nigeria, but still considers India "home." Lakshmi is 25 years old and is pursuing a Master's degree in Computer Engineering at AUS-2 University. In total, she only applied to one university. The interview with Lakshmi was conducted via Skype. Having done her undergraduate studies in Nigeria, Lakshmi is undoubtedly an outlier. What also makes her an outlier in terms of the survey data is that her most important factor in her decision-making process was "family." In particular, her brother was most influential. Lakshmi explained that, "I grew up in Nigeria and if you go back to India after five years of studying abroad you have pay what they call a long resident Indian fee. Pretty much as high as Australian and American fees so you might as well see a new country and study abroad, right?" Apart from the practical justification in deciding to attend graduate school in Australia, the underlying reason for pursuing Australia was because her brother was living and attending graduate school in Australia. Lakshmi went on to explain that, "because my brother lives here and ahhh… I used to live in Nigeria and most of the students came here and ummm… you know most got settled very quickly and are really happy here. So… I got really good feedback." Additionally, Lakshmi elaborated that her brother had the most influence on her decision to attend graduate school in Australia and stated:

> Well [my brother] was studying here first of all and he was settled and told me about the campus life here and ahhh… about the course he gave me all the information I needed he got me in touch with one of the lecturers here ahhh… so ya he pretty much helped me make up my mind. Plus he was

> still here, which was a big influencing factor.

Understandably, Lakshmi chose Australia because of her brother's influence. An interesting follow-up with regards to this decision is the fact that Lakshmi admitted that she made the incorrect decision. As mentioned in previous interviews, one of the last questions in the interview asked students if you could start over and begin the decision-making process again, would you do anything differently. Lakshmi confessed that she "would change my country, my course, and pretty much the whole thing [laughs]." Upon hearing this remark, I quickly replied, "could you maybe explain just a little bit more about that?" Lakshmi then elaborated and stated:

> Well ya sure. The main thing is that even though my brother came here and he sent me a lot of information I really didn't get it in the sense that I really didn't grasp what life here would be like. And ahhhh… and now I know more about American universities it's more about overall growth and stuff like that … so … ahhh… I think I would prefer to have gone to the U.S. Here [in Australia] education is more specific like you go into a certain field and you're only exposed to that field. I would have preferred learning a lot more about other fields as well.

It is very interesting that Lakshmi wished she had gone to the U.S. for graduate school. She is indeed an outlier in the overall scheme of the study under consideration here. Additionally, Lakshmi clearly was persuaded by her brother to pursue her graduate education in Australia. For better or worse, family had an influence on Lakshmi's decision to study overseas. In Lakshmi's case, when offered the opportunity to hypothetically change the past, she immediately wanted to voice her perspective on her decision to study in Australia. Without a doubt, Lakshmi was *pushed* away from India because of the high fees associated with returning Indian citizens, and at the same time she was *pulled* by her brother to select Australia for graduate school.

Summary of Interviews

There were numerous findings from the twenty interviews that aid in the deeper understanding of *why* students from India pursue graduate degrees in Australia or the U.S. Comparatively speaking, there were many similarities and differences between the Australia-based and U.S.-based student groups. In regards to quality of education and field of study, each of the students interviewed felt as though their field of study "pulled" them toward the U.S. or Australia because of the quality of education. At the same time, these students were also *pushed* to study abroad due to a lack of resources, competition, and the highly selective admissions process administered by institutions in India. In this way, the particular field of study had both a *push* and *pull* effect on U.S. and Australia-based students.

In relation to ranking and reputation of universities overseas, this decision-making factor was apparent in almost all interviews. For both groups of students, the reputation of the institution abroad was important, however, some students felt it was more important than others. Online rankings were commonly referred to, such as U.S. News and World Report, in order for students to gauge the reputation of the overall university as well as specific departments within the institution. To be sure, the reputation of the university had a *pulling* effect on students in both countries and undoubtedly impacted their decision-making processes.

Work-related opportunities were also an important factor in the overall selection process of universities located in Australia and the U.S. In both groups of interviewees, family members, friends, and/or seniors had an impact on the perceived opportunities for

employment during and after their graduate programs abroad. Students often referred to the experience of other individuals as an indicator that they too would have similar work-related opportunities upon graduation. Yet, several students were all too aware of the current economic downturn and how this has impacted job prospects in both the U.S. and Australia. Some students intended to stay within the U.S. and Australia for work, while others planned to return to India to pursue various career aspirations. Accordingly, work-related opportunities were an important factor in the decision-making process and *pulled* both U.S. and Australia-based students to their respective host countries for graduate studies.

With respect to the overarching theme, "quality of life," both groups of students made subtle reference to how graduate education received in the U.S. or Australia would enhance their overall quality of life. It is interesting that no matter where the student went for graduate school she or he had a much larger plan in motion that included obtaining a Master's or Ph.D.. This larger plan was captured in the interview process in various ways. In the following final chapter, an in-depth synthesis of various push *and* pull factors of decision-making help explain why students from India selected universities in the U.S. and Australia, respectively.

CHAPTER SIX

CONCLUSION

Summary

The complexity of student flows in the global market of higher education is vast. Understanding the true nature and context of decision-making processes is layered with a multitude of considerations. Such considerations relate to the overarching theme of student choice and selection of higher education institutions overseas. As shown in the findings presented in the data analyses chapters, there are a wide range of reasons and factors that contribute to the overall decision-making process of students from India. This study attempted to extract the various decision-making factors of STEM field students, namely those pursuing engineering and computer science graduate programs in the comparative context of Australia and the U.S. higher education.

A mixed-methods approach was used in order to address the complexities of decision-making processes. An online survey was employed in order to allow for the collection of original data gathered from students enrolled in four different higher education institutions in the U.S. and Australia. The two participating institutions in the U.S. were located in or near a large metropolitan area in the Midwest. The two universities in Australia were located in or near a large metropolitan area in Western Australia. Contacts at each of the four participating universities liaised between their students and the researcher in order to solicit their involvement in the online survey

related to decision-making processes. Electronic communications in the form of email correspondences allowed for the distribution of the online questionnaire to occur via the World Wide Web. Before data collection began, a review of the ethical standards of the proposed study was instituted, which resulted in the approval of Loyola University Chicago's Institutional Review Board (IRB) to approve the research project through an expedited review process.

The array of decision-making factors was initially captured by the design and implementation of the online survey. This mostly quantitative survey instrument was designed to accumulate respondent data related to study participants' self-reflection of their own decision-making process. In doing so, survey respondents filled out the online questionnaire in the "post-decision-making" time period that occurred after the student was already in the country of study. Students were based in an Australian or U.S. higher education institution and were enrolled in graduate programs at the time the survey was administered. Respondents reflected on their decision-making process, which provided a rich set of data and information related to choice and selection of graduate programs in the U.S. and Australia.

The online survey was created with the fundamental idea that there are many reasons or factors for why students from India decide to pursue graduate studies outside of India. In doing so, the survey was designed to limit the amount of decision-making variables so as to narrow the amount of variables presented to the survey participant. This strategy allowed the survey participant to answer both closed and open-ended questions, which aimed to allow respondents an opportunity to articulate their decision-

making process through a number of means. Using a step-logic design, only relevant questions were asked of each study participant in the online survey. As a result, quantifiable data was retrieved to inform whom to contact for follow-up interviews. Through follow-up interviews, various themes of decision-making processes were explored by strategically selecting survey participants that volunteered to be contacted for follow-up interviews.

The interview portion of data collection was an interesting and exciting time. Interviews began in the U.S. that included survey respondents from both participating U.S.-based universities in the Midwest. Telephone and in-person interviews occurred shortly after the online survey was closed. Meanwhile, Australia-based interviews occurred during the month of July 2010 and were conducted in-person interviews (when circumstances allowed). In all cases, the online survey was open for thirty days from the time university contacts sent invitations to their students in a call to participate in the decision-making study. Initial rounds of data analysis ensued immediately following the closing of each survey. This allowed for the strategic selection of volunteers to be contacted for follow-up interviews. All student interviews were recorded and transcribed during the months of June, July and August of 2010.

Perhaps most interesting during the data collection period was the challenge of finding relevant interviewees to contact following the survey distribution phase. Scheduling these interviews proved to be very difficult since there were a limited number of students that volunteered to be contacted for follow-up interviews *and* those that were most appropriate to contact based on the initial round of survey data analysis. For

example, various themes emerged from the data collected via the online survey. These themes largely centered on notions of rankings and reputation, country where the institution is located, and work-related opportunities. Accordingly, these areas were of particular interest in order to drill deeper into the understanding of how students managed and internalized these decision-making factors. Additionally, family and friends were interesting themes to pursue further in the interview data collection process due to the low number of survey respondents that cited these factors as important or influential in the overall decision-making process. As a result, ten students in U.S.-based and ten students in Australia-based universities were interviewed in order to excavate further the most and less frequently cited decision-making themes related to choice and selection of institutions overseas.

Findings Related to the Literature

To begin with, there were some findings related to the decision-making process that were to be expected. For example, one major expectation was the simple fact that reasons for studying outside of India are complex and involve a multitude of inter-related variables that have an impact on decision-making processes. Another anticipated finding was the number of study participants that were concerned with the academic "quality" of education when considering graduate school options. Quality indicators of HEIs abroad were largely obtained from ranking websites that prospective graduate students would research online throughout their decision-making process. The internet was used to obtain national and worldwide rankings, university websites, and/or social networking websites in 80% of the study participants. Therefore, prospective graduate students in

both the U.S. and Australia collected information from an array of online sources that aided in their decision-making process.

Findings Related to Reputation

Survey respondents enrolled in U.S. and Australian graduate institutions indicated *reputation of the institution* as the most important factor for deciding on a graduate institution overseas (38%). For U.S.-based students, 36% of survey respondents selected reputation of the institution as the most important decision-making factor. Meanwhile, 47% of the Australia-based students indicated that reputation was most important. My findings related to perceived academic quality and rankings align, in part, with previous literature on international school choice. For instance, Peterson et al. examined the impact of rankings on the institutional decision-making process, but not necessarily the impact on student decision-making. Peterson et al. explain that, "questions and discussion points were used to investigate how ranking systems affected four broad categories: academic standards and decisions, management decisions, institutional strategic development, and organizational culture."[1] Additional literature that focuses on quality of education include Mahapatra and Khan's macro assessment of how to develop a framework for determining "quality" in education settings, but not how prospective international students perceive such quality indicators when considering institutions overseas.[2]

[1]Peterson et al., 4.

[2]Mahapatra and Khan, 2007.

In Anna Robinson-Pant's recent article, "Changing Academies: Exploring International PhD Students' Perspectives on 'Host' and 'Home' Universities," an analysis of perceived academic quality at home and abroad is explored.[3] Similar to Robinson-Pant's discovery that perceived lack of quality at home institutions have an initial impact on the decision-making process to pursue education abroad; my research findings indicated similar processes of decision-making. For example, perceived low academic quality at home influenced – or "pushed" – many participants in my study to pursue options outside of India. My findings reveal that the majority of participants (55%) selected department reputation as most important factor when thinking about reputation. This finding on the importance of departmental reputation was also found in the interviews with U.S. and Australia-based students and reflects the specificity of prospective graduate students' expectations. Thus, my findings illustrate the pull of institutions abroad through overall and departmental reputation; coupled with the push of institutions in the home country (lack of academic quality), equated to the duel push and pull tensions of decision-making factors that ultimately drove students to pursue graduate school in Australia or the U.S.

Findings Related to Work-related Opportunities

Another set of findings from my research that aligns with previous literature involves the influence of perceived work-related opportunities in the country of destination. My findings show that 26% of all survey participants perceived work-related opportunities to be the most important factor in their decision-making process. For

[3]*See* Robinson-Pant, 2009.

Australia-based study participants, 18% indicated that work opportunities were the most important factor. Interestingly, 27% of U.S.-based students viewed work opportunities as the most important factor in the choice and selection of graduate institutions. To be sure, students from India enroll in graduate school in order to increase their "earning power."[4] Taking on a different analytical approach towards future work and career aspirations, Wadhwa et al. explore the factors that influence graduating student's perspectives on returning "home" after their studies in the U.S. and argue that, "career and quality of life [are] the main reason to return to their home country rather than stay in the United States."[5] In a similar theme, my research explored work-related opportunities as a motivating factor in their initial decision to study in the U.S. or Australia, respectively. Furthermore, during the interview process nearly all of the U.S. and Australia-based students mentioned that work-related opportunities were considered when selecting institutions overseas (18 of 20 interviewees). Not surprisingly, the importance of work-related opportunities is to be expected of prospective graduate students since they are typically more career-minded than undergraduates. Additionally, "quality of life" indicators can be assumed to include work-related opportunities, but were more elusive in my findings. As a result, my findings can only assume that pursuing a graduate degree in the U.S. or Australia would have an impact on the students' quality of life since this was not a specified variable in my study.

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[4]*See* Rakesh Grupta, "Leveraging Indian Talent Pool and Demographics to Build Competitive Advantage," *Education, Knowledge, and Economy* 3, no. 3 (December 2009): 213-229.

[5]Wadhwa et al., 3.

Findings Related to Increased Financial Income

Similar to work-related aspects having an influence on decision-making processes, financial considerations were also important for 30% of the online survey participants involved in my study. For example, while some participants did not indicate a direct correlation with work-related opportunities in the country of their choosing, some did indicate that they were "on a path towards a better future." The open-ended questions in the online survey indicated that 67% of those that selected "work-related" opportunities equated to the perception of increased income. Additionally, this notion of a "better future" often times did not directly correspond with the country where the student was pursuing studies, but rather as one student articulated about a few recently returned alumni, "[they] came back to India to start their own company and so they found it pretty good." According to this students' perspective, the financial considerations are not necessarily connected with work-related opportunities in their host country where they pursue graduate school. Rather, the prestige of obtaining a U.S. or Australian graduate education opens the door to many different possibilities; both in the U.S., Australia, and around the globe. Another interesting argument made by Wadhwa et al. is the fact that work visa policies in the U.S. – after completing studies – is perceived to be very problematic. Wadhwa et al. explain that "job difficulties resulting from restrictive visa policies could be playing a major role in spurring the exodus [after graduation]."[6] This view aligns in part with my research findings. Securing student visas is an important consideration for some prospective students, which is at the forefront of the

[6]*See* Wadhwa et al., 6.

current and ongoing debate involving the Australian government and prospective Indian students.[7]

For U.S.-based students, my findings revealed that a significant number of participants were motivated by career aspirations and work-related opportunities (26%). This finding coincides with findings from the British Council's recent longitudinal study that surveyed more than 100,000 prospective students over the course of three plus years regarding their decision-making processes. In the British Council study, "prospective students aiming to study in the U.S. were most likely to focus on enhancing their career prospects".[8] This focus on career prospects was also found in my study. Despite recent economic troubles in the U.S., students still perceive the U.S. to be the "land of opportunity" in terms of job prospects upon graduation.

For Australia-based students, work-related opportunities also were perceived to be influential during their decision-making processes. For example, in my study students that were attending graduate schools in Australia cited "reputation" of the institution abroad as the most important reason for pursuing graduate studies in Australia (47%). This coincides, in part, with recent literature that examines international students in Australia. For example, Shailaja Neelakantan examines the current state of "weak" engineering programs in India and how the Indian government is trying to address the

[7]*See* Taylor and Rees, 7.

[8]*See* Morgan, 1.

issue of quality and "reputation" of its higher education institutions.[9] My research was able to uncover the varying "push" factors that aid in the international mobility of students from India pursuing graduate education outside of India due to limited access to "quality" higher education institutions in India.

Findings Related to Gender

Regarding gender, my findings show that there were significant variations in how males and females responded to various factors of decision-making. As shown previously, males and females view "reputation" differently. For example, the reputation of a department, unit or individual was cited most often by both males and females (61%), however, a notable difference was seen in the way that females perceived "reputation of work opportunities" as the most important type of reputation. In this finding, females distinctly viewed the reputation of work opportunities as more important than their male counterparts. There were no males that indicated that the reputation of work opportunities were the most important factor, whereas three out of ten females perceived the reputation of work opportunities to be the most important consideration.

Another notable finding related to gender variation relates to how students perceived the reputation of a professor or individual within a department or unit. Female participants responded statistically different than males when considering the reputation of the professor as a factor in their decision-making process. Therefore, females in my study did not consider the reputation of a professor or individual within a department or

[9]*See* Shailaja Neelakantan, "India Shores Up Standards in Weak Engineering Programs," *Chronicle of Higher Education,* August 19, 2008. Retrieved online on August 27, 2008 at: http://chronicle.com/article/India-Strengthens-Its/1072

unit as important. This finding suggests that males perceived the reputation of a professor or individual within a department or unit as more influential in their decision-making process than females. Combining the decision-making variables of reputation, where the country is located, and work-related opportunities equated to 90% of males perceiving these factors as the most important in their choice and selection of universities in Australia and the U.S. Additionally, females considered pathways to permanent residency (citizenship) as *less* influential in their decision-making than their male counterparts.

Findings Related to University

Findings related to the four participating universities indicate a number of interesting conclusions. For example, as was discussed above, U.S.-based students consider the overall reputation of the institution as a more important factor in their decision-making process than their Australian-enrolled counterparts. Meanwhile, my findings also suggest that Australia-based students deem pathways to permanent residency (citizenship) as an important factor, more so than their U.S.-based peers. For example, 43% of Australian-based students agreed or strongly agreed that pathways to permanent residency (citizenship) were important factors while only 8% of U.S.-based students agreed or strongly agreed. When examining my findings on the reputation of alumni, U.S.-based respondents were statistically more likely to indicate that the reputation of alumni influenced their decision to study in the U.S. than Australia-based respondents. In terms of institutional reputation as a deciding factor, U.S.-based students considered the *overall* reputation of the institution as a more important factor in their

decision-making process than their Australian-enrolled counterparts. Additionally, U.S.-based and Australian-based university respondents were most similar in their responses in the perceived reputation of a professor or individual within a department or unit. Meanwhile, friends' influence for both U.S. and Australia-based interviewees showed how friends in India and those abroad had an impact on their decision-making processes. Therefore, my findings show that in all four participating universities prospective graduate students from India were most similar in how they viewed the reputation of the professor or department, and their perception of *friend influence*.

Model of Decision-making

The central analytical tool for this study is the use of Mazzarol and Soutar's "push and pull" theory related to international student mobility.[10] Returning to their definition of push and pull, it is interesting to consider the strengths and limitations of this analytical tool in the context of decision-making processes of students from India. Mazzarol and Soutar explain,

> The global pattern of international student flows may be explained by a combination of 'push and pull factors' that encourage students to study overseas. 'Push' factors operate within the source country and initiate a student's decision to undertake international study. 'Pull' factors operate within a host country to make that country relatively attractive to international students. Some of these factors are inherent in the source country, some in the host country and others in the students themselves.[11]

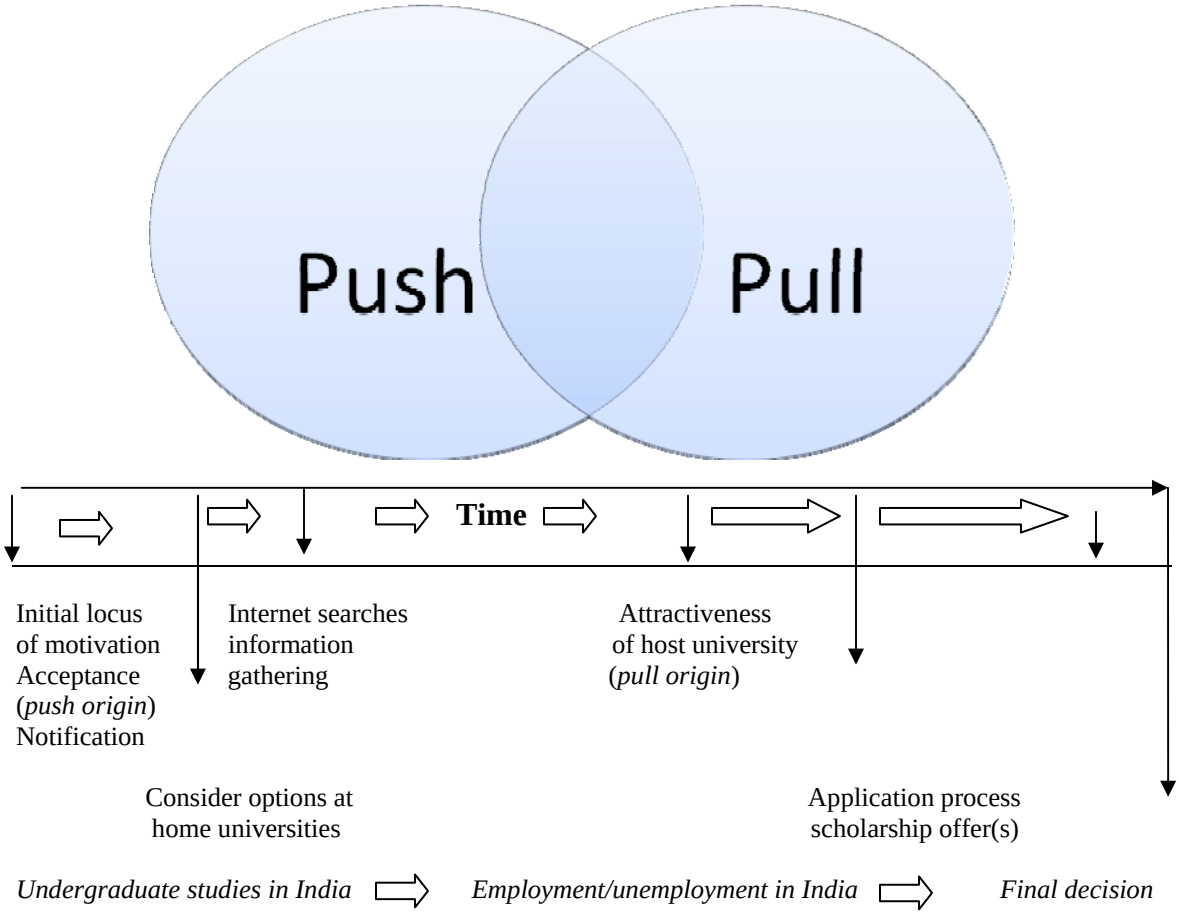
As eluded to in previous sections of this study, there are strengths and weaknesses of the push/pull analytical framework. For example, a strength of Mazzarol and Soutar's use of

[10]Mazzarol and Soutar, 82. *See* also, Mary E. McMahon, "Higher Education in a World Market: An Historical Look at the Global Context of International Study," *Higher Education* 24, no. 4 (1992): 465-482.

[11]Mazzarol and Soutar, 82.

push/pull lies in the assumption that there are external influences that prospective international students encounter that result in the pushing and pulling of home institutions and educational opportunities overseas. Ultimately, these external forces were quantified in my study in order to make sense of the overall decision-making process. According to Mazzarol and Soutar's definition above, push factors are specific to a prospective students' home country, whereas pull factors function within a host country. This framing of push/pull factors has been very useful in understanding the complex processes of international mobility in the milieu of students from India pursing graduate degrees in Australia and the U.S. However, the analytical tool falls short in some ways. These pitfalls of push/pull as an analytical framework include the linear mode of thinking about the relocation of students from one country to another. Whether decision-making processes can be connected to the home countries "pushing" variables, or host countries "pulling" variables, the basic premise of push/pull is a linear spectrum of influence. For example, one way in which the push/pull analytical framework is limited can be seen in Figure 1 below. By including a Venn diagram in my model of decision-making, I was able to address the shortcomings of Mazzarol and Soutar's use of the analytical tool of push/pull.

Figure 1. Model of Decision-making: Push/Pull Factors on Prospective Graduate Students from India



As shown above, prospective graduate students are motivated to pursue studies outside of India during undergraduate studies, or during times of employment/ unemployment when initially considering graduate school. By illustrating the overlap of push and pull variables related to decision-making processes (i.e., "field of study" and "friends"), push/pull theory has been expanded to show a timeline and explanation specific to the findings from the study presented here. The timeline begins differently for

every prospective student's "initial locus of motivation." Whether this initial motivation begins during time spent in undergraduate studies or during time of employment/ unemployment, students are pushed as well as pulled. The time period for when students decided to go abroad for graduate school for both U.S. and Australia-based students was during their "post-secondary studies" (n = 65). This equated to 48% of the survey respondents were enrolled in post-secondary education when they decided to pursue graduate education abroad.

As shown above, push factors originating in India include access to "quality" higher education, intense competition for admissions at home universities, family pressures, and the pursuit of financial resources gained via graduate school training abroad. Pull factors include the prestige of obtaining a foreign degree, country of location, scholarships, work-related opportunities, and global rankings. The internet is an invaluable resource for prospective students from India. Study participants indicated the internet as one of the most important means of gaining knowledge about universities overseas, including institutional/department rankings, and connections to their co-nationals (or "seniors" as the study participants referred to in the online survey) currently enrolled at institutions abroad.

As the attractiveness of universities abroad increases, prospective students in my model of decision-making acquire an enormous amount of information. Seniors in particular appear to be very influential, especially in the social media outlets such as Orkut. As the pull of universities abroad in the form of agents, websites, and scholarship and visa applications increase, so too does the pull of external forces. Additionally,

prospective students must navigate various university ranking websites ultimately coming up with a handful of "best" options to apply to depending on their field of study and financial cost. Among other considerations, some prospective students must weigh the costs associated with the financial investment of graduate studies abroad.

As the above model indicates, push/pull theory is a useful analytical framework. For instance, there are many areas within the push and pull cycles that may or may not influence particular students' choice and selection of an institution overseas. Moreover, the model above is able to effectively demonstrate the myriad of factors that can be considered when students from India select a graduate institution overseas. For example, my research shows that "field of study" is a decision-making variable that can be considered both a push *and* pull factor. Consider for a moment Shivani's case, which was described earlier. Shivani's field of study was not offered in India, which can be considered a "push" factor. Meanwhile, the attractiveness of Shivani's field of study "pulled" her towards institutions in the U.S. Examining my model of decision-making above, it is clear that "field of study" is both a push *and* pull factor. Similarly, "friends" and "internet searches" can be considered as push *and* pull factors that influence prospective graduate students choice and selection of institutions outside of India. By adding cyclical and inter-dependent considerations to the Mazzarol and Soutar's linear framework of push/pull theory, future scholars may use my model of decision-making to navigate the complex theoretical space that underscores choice and selection in the global market of higher education. By illustrating the overlap between push and pull variables, the Venn diagram in my model of decision-making shows how push factors merge with

pull factors throughout the choice and selection process. In doing so, my model adds to Mazzarol and Soutar's definition of push/pull and helps strengthen the analytical tool of push/pull in the context of global student mobility.

Significant Contributions of the Study

Notwithstanding the shortcomings of the analytical framework described above, there are a number of significant contributions of the study. One such contribution is the originality of the research project as a whole. The comparative nature of the study is original and involved perspectives from India in the context of the U.S. and Australia, which has not been done previously. Furthermore, the focus of the study was STEM field graduate students from India, which has not been explored either. The comparison of two English-speaking countries and their role in the global market of higher education adds to existing literature on the topic of international student mobility in the increasingly interconnected and globalized world.

Another significant contribution of the study can be seen in the formation of an original model of decision-making in the Indian context (see Figure 1 above). Push/pull theory was expanded upon to allow for a more detailed understanding of the complexities of student choice and selection of institutions overseas. While this study cannot be applied generally to all prospective students from India, it can be considered as a starting point for understanding the decision-making processes of student flows outside of India's national boundaries at the level of higher education. As was shown throughout the study, there are numerous ways in which students from India select graduate institutions in Australia and the U.S. In creating my model of decision-making that was rooted in

push/pull theory, a deeper understanding of the numerous factors that contribute to the choice and selection of graduate institutions are unraveled.

Another significant contribution of this study is the methodological considerations for future scholars to pursue surrounding similar topics of international student mobility and decision-making processes. By using a mixed-methods approach, I was able to understand decision-making processes through multiple ways. For example, when attempting to disentangle the multifaceted nature of school choice in an international context, future scholars may wish to employ a mixed-methods approach to answer a wider range of questions that attempt to understand the "why" questions of decision-making processes. Future projects that attempt to understand the complexity of school choice in the context of STEM field students may consider using a methodological approach that includes quantitative and qualitative measurements of decision-making. In doing so, future scholars interested in comparative research involving student mobility in a global context can use this study.

The final significant contribution of this study involves a return to the title of this dissertation: "USA v. Australia: Indian Engineering Students Pursuing Graduate Degrees Abroad, an Analysis of Factors influencing the choice and location of Institution." Based on the research findings, the two groups of students (US-based and Australia-based) were very similar in how they "decided" on an institution overseas. For example, both groups were very similar in how they perceived the reputation of the professor, department or individual unit of a particular institution. Additionally, both groups were also similar is their view of "friends" were influential in their decision-making process. Lastly, the two

groups differed significantly when looking at factors such as "pathways to permanent residency or citizenship," as well as the perceived "reputation of alumni." Whereas the U.S-based study participants were more likely to perceive reputation of alumni as an important consideration in their decision-making process when compared to their Australia-based colleagues, Australia-based students from India were more likely to consider pathways to citizenship than their U.S.-based cohort.

Limitations

There are several limitations associated with this research project. The most critical component of my research involves the limited number of Australian-based students from India (*n*=17). The study is limited further due to its narrowed focus on self reporting decision-making processes as an "after-the-fact" reflection process. My study did not track in real time Indian students who were considering, attempting to secure and then embarking on study overseas. Rather, my study specifically examined student decision-making *after* their choice and selection process occurred. Therefore, a "real time" study might shed a different light on decision-making pathways and processes.

Another limitation of this study is the multitude of questions I have not been able to answer. One such question of noteworthy importance involves transfer students. My study does not capture in-country mobility and transfer, which has been problematic for previous scholars as well.[12] I was not able to explore whether or not students that completed my online survey transferred to another institution or country shortly after

[12]For more information on student transfer in-country and out-of-country, *see* Bonita C. Jacobs, *The College Transfer Student in America: The Forgotten Student* (American Association of Collegiate Registrars and Admissions Officers, Washington, DC, 2004). *See* also, Robert M. Carini, George D. Kuh, and Chun-Mei Zhao, "A Comparison of International Student and American Student Engagement in Effective Educational Practices," *Journal of Higher Education* 76, no. 2 (2005): 209-231.

completing my instrument. My subject populations were Indians who had studied at one of the four participating institutions for a time period of six to eighteen months and I did not know whether these students were in-country transfers or whether they transferred after completing the study. It is entirely feasible that students from India studying in the U.S. or Australia transferred out of their HEI to pursue another opportunity elsewhere. This post-enrollment dilemma with transfer students is not restricted to in-country mobility. For example, students in Australian HEIs could potentially transfer to an institution in the U.S. and vice versa. Furthermore, students could select an institution outside of the scope of the U.S. and Australia if and when they decided to transfer to another university. This is a significant limitation because it would diminish the reliability of some respondents' information with respect to their decision to study at a particular location and institution.

Lastly, there is the issue of generalizations. Despite my quantitative and qualitative analyses, my findings fall short of being all inclusive. Without a doubt, my findings cannot be generalized to the entire population of prospective graduate students in India. Consider for a moment the fact that hundreds of thousands of students from India pursue graduate degrees every year abroad – in engineering fields and beyond – and then think about "why" those particular students decide to pursue degrees overseas. This information was not captured in my study. To be certain, there is simply no possible way that I can generalize my findings to *all* prospective students from India. I have undoubtedly been able to create a lucid picture of how, why, when, and where the decision-making process occurs, however, not all scenarios have been depicted. Instead,

a micro-level account of students from India have been brought to light in order to generate findings that future scholars may well want to revise and refine.

Promising Directions for Future Research

There are many ways in which future scholars can move forward from the research presented here. One promising direction for those considering the international flow of students from one country to another is the applicable nature of my model of decision-making presented above (see Figure 1). My model of decision-making is one such example that can help inform future researchers to use existing literature that will help answer and frame a specific set of research questions in a particular national context. For instance, the decision-making variables addressed above in my model of decision-making may inform future researchers about the kind of specific variables to consider in their research project. In this way, future researchers can rely on my model of decision-making to help build an instrument for designing a pilot survey that may examine choice and selection of universities outside of a particular home country. After these future researchers conduct the pilot study of their instrument, which is based on my model of decision-making, their data collection tool can be refined further to adapt to the decision-making variables and contextual issues under consideration for that particular research project.

Another promising direction for future research may involve the pursuit of a longitudinal study on decision-making processes. In accordance with the saying, "the grass is always greener on the other side," it would be interesting for future researchers to map the decision-making process of students that do not stay in their initial country of

choice due to unrealistic expectations. Often time's pre-existing concepts and ideas can mislead students to believe that an education received at *institution X* is "better" than education received at *institution Y*. If future scholars are to examine this unchartered area of research further, additional elements of decision-making investigation would add to the existing body of knowledge surrounding this topic. In doing so, future researchers in the area of global movements of students may wish to examine and discover the elusive nature of international transfer students. For instance, if a student does transfer within the same country and from one institution to another, "why" did the student transfer out of the previous institution that was initially sought and decided upon? In order to answer this question, future researchers may rely on my model of decision-making as a reference point for initial decisions motivating them to pursue studies overseas, but then add to and perhaps create their own model for understanding why students subsequently decided to enroll in another institution. This same objective could be expanded and explored in other geographic areas that involve the transfer of students across national borders. However, this presents major logistical challenges when tracking international transfer students from one country to another.

Another area of potential consideration for future research involves social media. Various social media tools are becoming increasingly popular for people and students across cultures and nationalities resulting in more "connection" through the internet. Prospective students from India have connections all over the world, including the U.S. and Australia. As such, the internet and the enormous reach it fosters allow social networking sites to act as a conduit in the choice and selection process for online

communities across the world. Decision-making factors and the potential influence of social media, such as Facebook, Orkut, and Yahoo Groups, may be an interesting area to examine.

One final consideration for future research may include an in-depth study of international student alumni. The elusiveness of international alumni that studied in the U.S. and Australia may add to the existing gap in scholarship with respect to the role that international alumni play in the overall decision-making process. Future scholars may find interesting conclusions as a result of examining international alumni. Whereas my research analyzed decision-making processes of students "after-the-fact," and while they were still enrolled; future scholars may attempt to track down international alumni to gain this additional perspective on decision-making processes.

Concluding Remarks

Choice and selection of universities in today's globalized world is a complex process. People from around the world are increasingly traveling across national borders in pursuit of educational aspirations. Students from India are pushed and pulled by the expanding global market of higher education due to the innately complex nature of globalization and its impact on education around the world. As more students from India enter elementary education and proceed onwards to secondary education, there will be an explosion of higher education enrollment in India in the 21st Century. As a result, there will be increased competition for access into Indian HEIs, which will prompt many more students from India to seek an outward gaze for their educational expectations. To be sure, understanding these global movements of students and the flows between countries

will be of particular interest to those involved in educational policy formation at the national levels in many countries. In the 21st Century and beyond, university academics and administrators will be competing across national borders to attract the best and the brightest from all corners of the globe.

APPENDIX A

ONLINE SURVEY

Statement of Consent:

By responding to the survey, you indicate that you have read the information provided above, have had an opportunity to ask questions, and agree to participate in this research study. Submission of the survey acknowledges consent to participate. Please feel free to print this section to keep for your records.

Instructions for participant:

This is a survey that measures international student choice and selection of an institution abroad. There are many factors that influence choice and selection of your graduate program in engineering, computer science, or related field. Your honest feedback is encouraged.

Please answer the following questions as if each question is referred to you. Thank you.

Question #1. Which of the following statements is most important about why you selected an educational institution overseas?

The reputation of the institution
The country where the institution is located
My family influence
My friends' influence
Work-related opportunities
None of the above

2. You selected "none of the above" in the previous question. In the text box below, please describe the most important reason for why you selected an educational institution overseas.

3. Please explain why you selected the answer to the above question (#1). Please write 1 or 2 sentences about why you selected this as factor as most important about why you selected an educational institution overseas?

4. During which of the following experiences in your life did you decide to select an educational institution overseas?

During my post-secondary studies
During my time spent in the USA[1]
During my work-related experience
During my time being unemployed
None of the above

5. You selected "none of the above" in the previous question. In the text box below, please describe when you selected an educational institution overseas?

6. What is the most important factor that made you choose reputation of the educational institution?

Reputation of department or unit where you will study
Reputation of professor or individual within department or unit where you will study
Reputation of alumni where you will study
Reputation of work-related opportunities upon graduation
Reputation of an educational institution

7. In the text box below, please describe why you chose the country where the institution is located?

8. In the text box below, please describe how you learned about the educational institution outside your home country?

9. In the text box below, please describe the most important factor that made you choose an educational institution outside your home country?

10. In the text box below, please indicate any additional comments you would like to share about your decision to select an educational institution outside your home country?

Please answer the following questions as if each question is referred to you. Thank you.

11. Are you Male or Female?

Male
Female

[1]U.S.-based and Australia-based students were given the exact same questionnaire, save for the differences in country. Australia was replaced with "U.S." throughout the online survey where applicable.

12. How old are you?

13. What is your educational major (for example, type of “engineering”)?

14. Where did you complete your undergraduate studies?

15. Please list the country where you completed your undergraduate studies?

16. What is your level of study (Master’s, Ph.D. etc…)?

17. Where do you call “home”?

18. How many years have you lived in India?

19. Where have you lived in India (please include city and state)?

20. Have you ever lived outside of India before coming to the United States to attend graduate school?

21. Where have you lived outside of India (please name the city, country)?

22. How long did you live there?

23. How long have you lived in the United States?

24. Did you live in the United States prior to your graduate studies?

Yes
No

25. Have you traveled to the United States prior to your graduate studies?

26. Do you have any additional comments related to any of the questions above?

Instructions for participant:

This is the final section of the survey. Listed below are a number of statements related to choice and selection of your graduate program in engineering or computer science. Read each statement as if it referred to you. Below each statement click on the number that best matches your agreement or disagreement. Thank you.

For example, do you STRONGLY DISAGREE (1) – DISAGREE (2) - DON"T AGREE OR DISAGREE (3) – AGREE (4) – OR - STRONGLY AGREE (5) with the following statement:

27. The rankings of the educational institution abroad influenced me to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

28. The country where my institution is located influenced me to go abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

29. My family influenced me to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

30. My friends influenced me to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

31. Employment opportunities influenced me to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

32. I was enrolled in post-secondary studies when I was influenced to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

33. I was in the USA when I was influenced to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

34. I was in a work-related setting when I was influenced to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

35. I was unemployed when I was influenced to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

36. The reputation of department or unit influenced me to select my institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

37. The reputation of professor or individual within department or unit influenced me to select my institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

38. The reputation of alumni where I study influenced me to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

39. The reputation of work-related opportunities upon graduation influenced me to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

40. The reputation of the institution where I study influenced me to select the institution abroad.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

41. Pathways to permanent residency (citizenship) influenced me to select the institution abroad because of the country in which it is located.

RANKING SCALE
STRONGLY DISAGREE (1)
DISAGREE (2)
DON'T AGREE OR DISAGREE (3)
AGREE (4)
STRONGLY AGREE (5)

42. Congratulations! You have completed the survey. Thank you.

Would you be willing to be contacted for a short follow-up interview related to this survey (by phone, computer, and/or in person)? Please note: that completing this question and providing your contact information eliminates the confidentiality of the responses and reduces the extent to which they are confidential.

Yes
No

43. Please enter you email address and full name in the text below.

44. Are you interested in a entering the random lottery for a chance to win an i-Phone?)? Please note: that completing this question and providing your contact information eliminates the confidentiality of the responses and reduces the extent to which they are confidential.

Yes
No

45. Please enter you email address and full name in the text below

46. Congratulations! You have now completed the online survey. Thank you.

If you have any additional comments you would like to share, please enter these in the text below.

APPENDIX B

INTERVIEW PROTOCOL

1. Why did you select an educational institution overseas?

2. What factors influenced you to select an educational institution overseas?

3. Why did you select an institution in Australia?[1]
    a. Did you consider other educational institutions outside of Australia?
    b. Did you consider more than one institution in Australia?
    c. If so, how many institutions did you consider?
    d. What factors influenced you to select your current educational institution in Australia?

4. Do you think your current educational institution has a "good" reputation from your perspective?

5. Did this perspective influence you to select your current educational institution?

6. Describe how you measure the reputation of an educational institution.
    a. Can you help me understand how you define an institutions reputation?

7. Did your family help you decide which educational institution to select
    a. How did your family help you decide which educational institution to select?
    b. Describe how your family helped you decide which educational institution to select.

8. Did your friends help you decide which educational institution to select?

9. Did you consider work-related opportunities when selecting an educational institution overseas?

10. Describe what most influenced you to select an educational institution overseas.

11. If you could start over and begin the decision-making process again, would you do anything differently?

12. What would you suggest to other students in your similar position at the time of graduate school selection, if any?

13. Do you have any additional comments you would like to share about your decision to study overseas?

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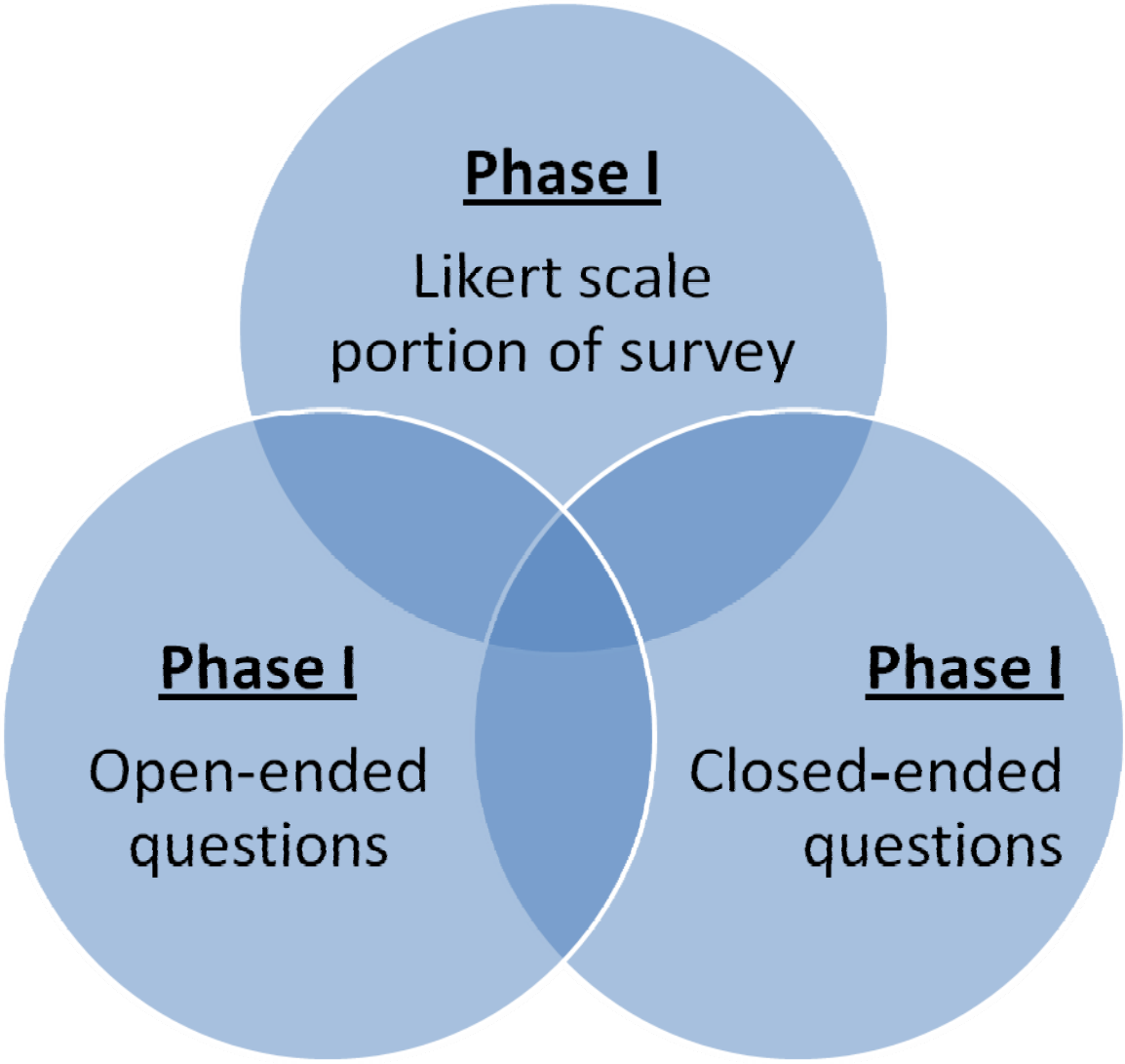
[1]U.S.-based students were asked questions in the "U.S." context where applicable.

APPENDIX C

DIAGRAM OF RESEARCH METHODS

Figure 2. Diagram of Phase I of Research Methods[1]



[1]This is an illustration of the various phases of data collection and analysis.

Figure 3. Diagram of Phases I & II of Research Methods

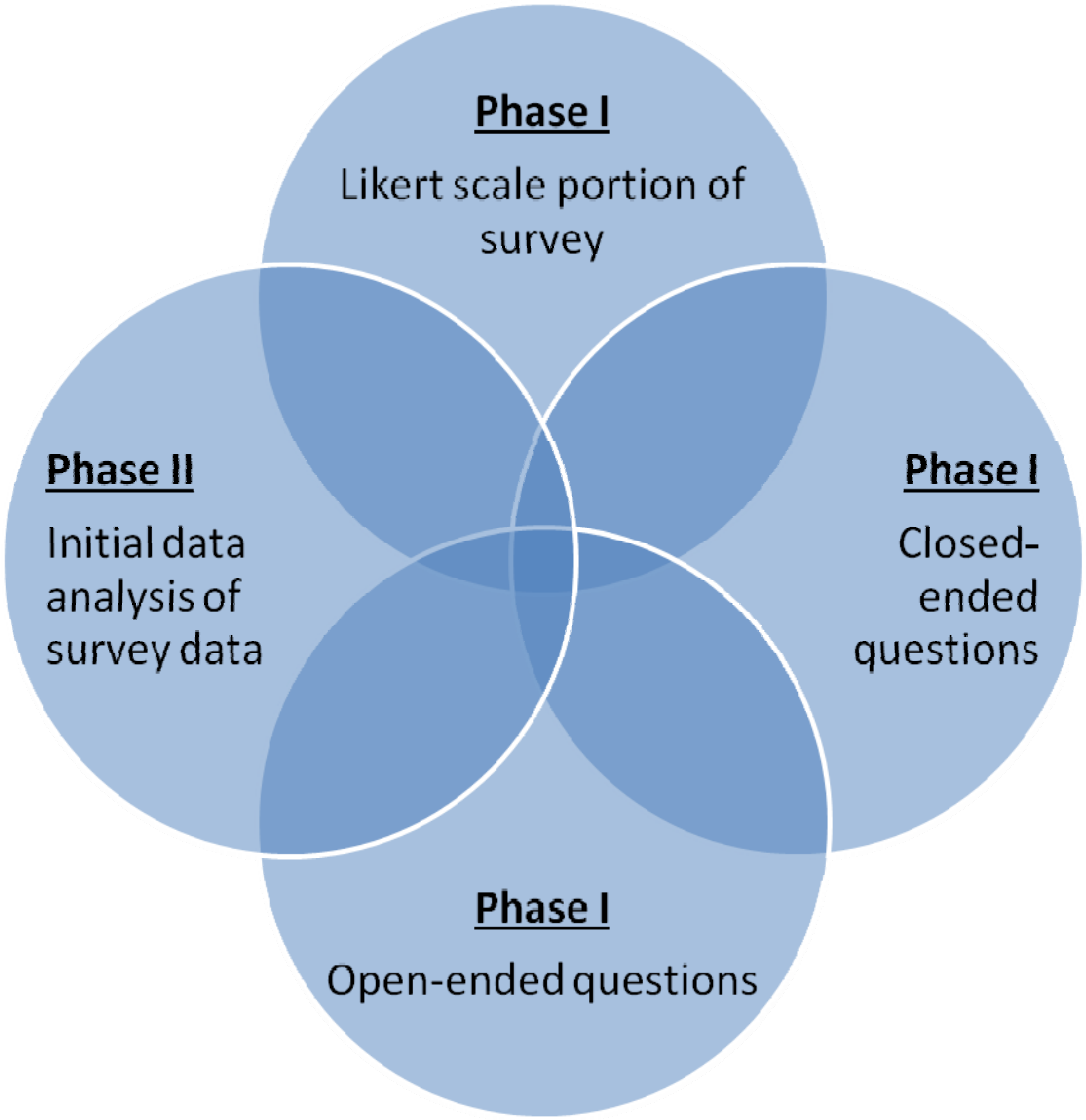


Figure 4. Diagram of Phases I, II, and III of Research Methods

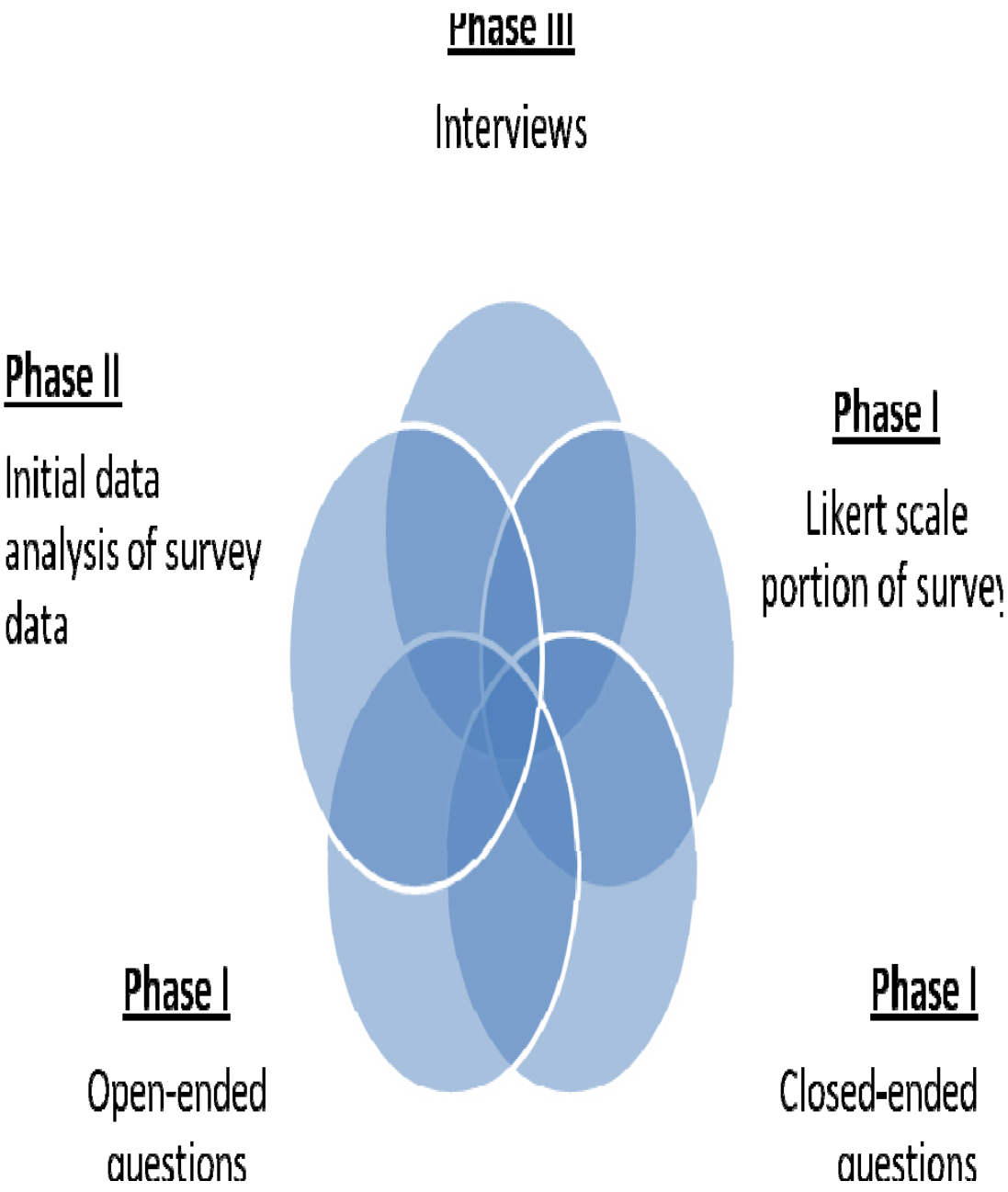


Figure 5. Diagram of Phases I, II, III, & IV of Research Methods

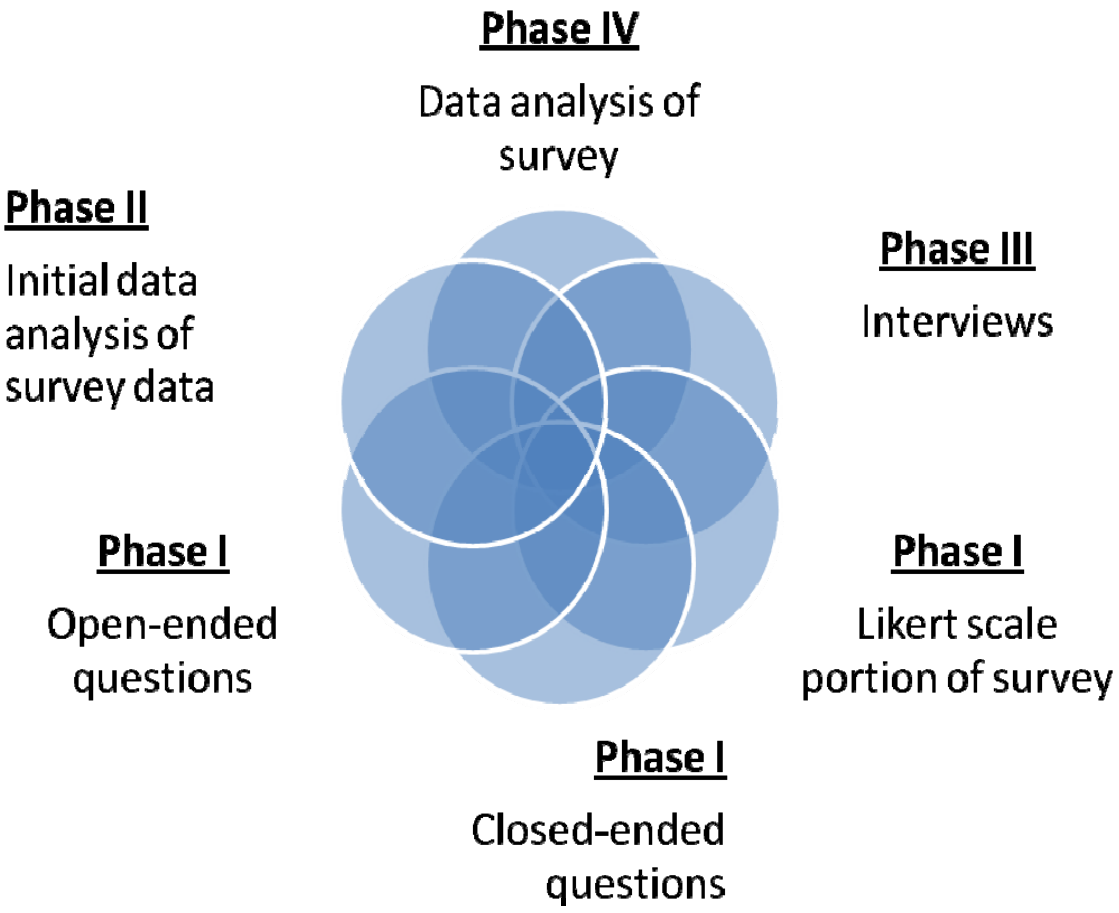
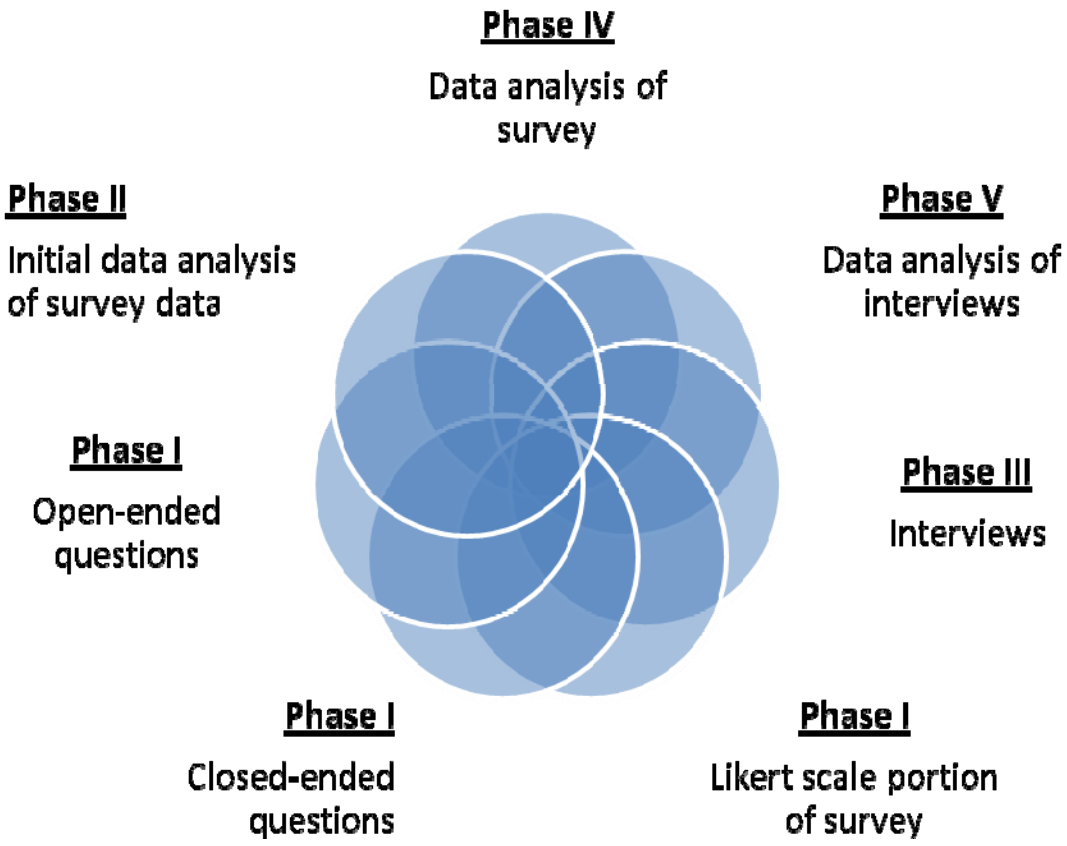


Figure 6. Diagram of Phases I, II, III, IV, & V of Research Methods



APPENDIX D

LIKERT SCALE UNIVERSITY RESPONSES

Table 30. # 27 Likert Scale (University)

Question 27: The rankings of the educational institution abroad influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q27_num * univ	89	65.9%	46	34.1%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q27_num	Strongly Disagree	0	2	0	1	3
	Disagree	2	7	1	0	10
	Don't Agree or Disagree	1	8	3	0	12
	Agree	4	40	5	2	51
	Strongly Agree	0	10	0	3	13
Total		7	67	9	6	89

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.021[a]	12	.115
Likelihood Ratio	17.600	12	.128
Linear-by-Linear Association	.543	1	.461
N of Valid Cases	89		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .20.

Table 31. # 28 Likert Scale (University)

Question 28: The country where my institution is located influenced me to go abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q28_num * univ	97	71.9%	38	28.1%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q28_num	Strongly Disagree	0	7	0	1	8
	Disagree	0	10	2	0	12
	Don't Agree or Disagree	0	11	1	1	13
	Agree	4	20	3	3	30
	Strongly Agree	4	26	3	1	34
Total		8	74	9	6	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.963[a]	12	.706
Likelihood Ratio	12.735	12	.389
Linear-by-Linear Association	1.077	1	.299
N of Valid Cases	97		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .49.

Table 32. # 29 Likert Scale (University)

Question 29: My family influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q29_num * univ	96	71.1%	39	28.9%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q29_num	Strongly Disagree	3	22	2	2	29
	Disagree	2	26	2	3	33
	Don't Agree or Disagree	2	13	0	1	16
	Agree	1	10	5	0	16
	Strongly Agree	0	2	0	0	2
Total		8	73	9	6	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.557[a]	12	.330
Likelihood Ratio	13.415	12	.340
Linear-by-Linear Association	.052	1	.819
N of Valid Cases	96		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .13.

Table 33. # 30 Likert Scale (University)

Question 30: My friends influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q30_num * univ	97	71.9%	38	28.1%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q30_num	Strongly Disagree	2	11	1	0	14
	Disagree	2	22	1	2	27
	Don't Agree or Disagree	2	12	3	2	19
	Agree	1	27	4	2	34
	Strongly Agree	1	2	0	0	3
Total		8	74	9	6	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.872[a]	12	.714
Likelihood Ratio	9.491	12	.661
Linear-by-Linear Association	.697	1	.404
N of Valid Cases	97		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .19.

Table 34. # 31 Likert Scale (University)

Question 31: Employment opportunities influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q31_num * univ	97	71.9%	38	28.1%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q31_num	Strongly Disagree	0	1	0	0	1
	Disagree	1	12	1	0	14
	Don't Agree or Disagree	2	14	1	3	20
	Agree	2	30	4	2	38
	Strongly Agree	3	17	3	1	24
Total		8	74	9	6	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.122[a]	12	.910
Likelihood Ratio	6.560	12	.885
Linear-by-Linear Association	.009	1	.924
N of Valid Cases	97		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .06.

Table 35. #32 Likert Scale (University)

Question 32: I was enrolled in post-secondary studies when I was influenced to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q32_num * univ	96	71.1%	39	28.9%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q32_num	Strongly Disagree	4	12	1	1	18
	Disagree	2	26	2	0	30
	Don't Agree or Disagree	0	9	2	3	14
	Agree	1	15	4	2	22
	Strongly Agree	1	11	0	0	12
Total		8	73	9	6	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.188[a]	12	.084
Likelihood Ratio	20.430	12	.059
Linear-by-Linear Association	1.360	1	.244
N of Valid Cases	96		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .75.

Table 36. # 33 Likert Scale (University)

Question 33: I was in the USA/Australia when I was influenced to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q33_num * univ	95	70.4%	40	29.6%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q33_num	Strongly Disagree	6	47	5	5	63
	Disagree	1	15	1	0	17
	Don't Agree or Disagree	0	5	1	1	7
	Agree	0	2	1	0	3
	Strongly Agree	1	3	1	0	5
Total		8	72	9	6	95

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.926[a]	12	.791
Likelihood Ratio	9.085	12	.696
Linear-by-Linear Association	.013	1	.909
N of Valid Cases	95		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .19.

Table 37. #34 Likert Scale (University)

Question 34: I was in a work-related setting when I was influenced to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q34_num * univ	96	71.1%	39	28.9%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q34_num	Strongly Disagree	2	30	4	1	37
	Disagree	0	12	3	1	16
	Don't Agree or Disagree	1	6	0	2	9
	Agree	2	19	2	2	25
	Strongly Agree	2	7	0	0	9
Total		7	74	9	6	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.936[a]	12	.374
Likelihood Ratio	13.744	12	.317
Linear-by-Linear Association	.468	1	.494
N of Valid Cases	96		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .56.

Table 38. # 35 Likert Scale (University)

Question 35: I was unemployed when I was influenced to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q35_num * univ	96	71.1%	39	28.9%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q35_num	Strongly Disagree	2	43	5	2	52
	Disagree	1	14	1	1	17
	Don't Agree or Disagree	2	7	0	3	12
	Agree	2	9	3	0	14
	Strongly Agree	0	1	0	0	1
Total		7	74	9	6	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.323[a]	12	.177
Likelihood Ratio	14.787	12	.253
Linear-by-Linear Association	.002	1	.965
N of Valid Cases	96		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .06.

Table 39. # 36 Likert Scale (University)

Question 36: The reputation of department or unit influenced me to select my institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q36_num * univ	96	71.1%	39	28.9%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q36_num	Strongly Disagree	1	3	1	1	6
	Disagree	0	3	1	0	4
	Don't Agree or Disagree	3	18	1	1	23
	Agree	4	39	6	2	51
	Strongly Agree	0	10	0	2	12
Total		8	73	9	6	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.484[a]	12	.574
Likelihood Ratio	11.892	12	.454
Linear-by-Linear Association	.027	1	.869
N of Valid Cases	96		

a. 17 cells (85.0%) have expected count less than 5. The minimum expected count is .25.

Table 40. # 37 Likert Scale (University)

Question 37: The reputation of professor or individual within department or unit influenced me to select my institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q37_num * univ	96	71.1%	39	28.9%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q37_num	Strongly Disagree	3	8	0	1	12
	Disagree	0	14	3	2	19
	Don't Agree or Disagree	2	25	3	2	32
	Agree	1	21	3	0	25
	Strongly Agree	2	5	0	1	8
Total		8	73	9	6	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.146[a]	12	.234
Likelihood Ratio	17.607	12	.128
Linear-by-Linear Association	.145	1	.703
N of Valid Cases	96		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .50.

Table 41. # 38 Likert Scale (University)

Question 38: The reputation of alumni where I study influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q38_num * univ	97	71.9%	38	28.1%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q38_num	Strongly Disagree	3	10	0	3	16
	Disagree	1	12	2	3	18
	Don't Agree or Disagree	3	24	4	0	31
	Agree	1	22	3	0	26
	Strongly Agree	0	6	0	0	6
Total		8	74	9	6	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.647[a]	12	.097
Likelihood Ratio	22.129	12	.036
Linear-by-Linear Association	1.653	1	.199
N of Valid Cases	97		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .37.

Table 42. # 39 Likert Scale (University)

Question 39: The reputation of work-related opportunities upon graduation influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q39_num * univ	97	71.9%	38	28.1%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q39_num	Strongly Disagree	0	4	0	0	4
	Disagree	1	5	1	0	7
	Don't Agree or Disagree	2	13	4	3	22
	Agree	2	37	3	3	45
	Strongly Agree	3	15	1	0	19
Total		8	74	9	6	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.100[a]	12	.520
Likelihood Ratio	12.668	12	.394
Linear-by-Linear Association	.949	1	.330
N of Valid Cases	97		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .25.

Table 43. # 40 Likert Scale (University)

Question 40: The reputation of the institution where I study influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q40_num * univ	97	71.9%	38	28.1%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q40_num	Strongly Disagree	2	7	0	2	11
	Disagree	1	10	1	1	13
	Don't Agree or Disagree	1	14	3	0	18
	Agree	4	35	5	2	46
	Strongly Agree	0	8	0	1	9
Total		8	74	9	6	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.057[a]	12	.611
Likelihood Ratio	12.317	12	.421
Linear-by-Linear Association	.015	1	.903
N of Valid Cases	97		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .56.

Table 44. # 41 Likert Scale (University)

Question 41: Pathways to permanent residency (citizenship) influenced me to select the institution abroad because of the country in which it is located.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q41_num * univ	97	71.9%	38	28.1%	135	100.0%

		University				Total
		AUS-1	USA-1	USA-2	AUS-2	
Q41_num	Strongly Disagree	0	35	3	1	39
	Disagree	2	20	3	2	27
	Don't Agree or Disagree	2	13	2	1	18
	Agree	2	2	1	1	6
	Strongly Agree	2	4	0	1	7
Total		8	74	9	6	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.255[a]	12	.108
Likelihood Ratio	18.714	12	.096
Linear-by-Linear Association	.117	1	.733
N of Valid Cases	97		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .37.

APPENDIX E

LIKERT SCALE GENDER RESPONSES

Table 45. # 27 Likert Scale (Gender)

Question 27: The rankings of the educational institution abroad influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q27_num * Q11_num	89	65.9%	46	34.1%	135	100.0%

		Gender		Total
		Male	Female	
Q27_num	Strongly Disagree	3	0	3
	Disagree	9	1	10
	Don't Agree or Disagree	7	5	12
	Agree	34	17	51
	Strongly Agree	10	3	13
Total		63	26	89

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.579[a]	4	.333
Likelihood Ratio	5.749	4	.219
Linear-by-Linear Association	1.004	1	.316
N of Valid Cases	89		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .88.

Table 46. # 28 Likert Scale (Gender)

Question 28: The country where my institution is located influenced me to go abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q28_num * Q11_num	97	71.9%	38	28.1%	135	100.0%

		Gender		Total
		Male	Female	
Q28_num	Strongly Disagree	3	5	8
	Disagree	9	3	12
	Don't Agree or Disagree	10	3	13
	Agree	19	11	30
	Strongly Agree	28	6	34
Total		69	28	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.680[a]	4	.104
Likelihood Ratio	7.340	4	.119
Linear-by-Linear Association	3.148	1	.076
N of Valid Cases	97		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 2.31.

Table 47. # 29 Likert Scale (Gender)

Question 29: My family influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q29_num * Q11_num	96	71.1%	39	28.9%	135	100.0%

		Gender		Total
		Male	Female	
Q29_num	Strongly Disagree	23	6	29
	Disagree	20	13	33
	Don't Agree or Disagree	12	4	16
	Agree	11	5	16
	Strongly Agree	2	0	2
Total		68	28	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.671[a]	4	.452
Likelihood Ratio	4.208	4	.379
Linear-by-Linear Association	.020	1	.888
N of Valid Cases	96		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .58.

Table 48. – # 30 Likert Scale (Gender)

Question 30: My friends influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q30_num * Q11_num	97	71.9%	38	28.1%	135	100.0%

		Gender		Total
		Male	Female	
Q30_num	Strongly Disagree	10	4	14
	Disagree	19	8	27
	Don't Agree or Disagree	14	5	19
	Agree	24	10	34
	Strongly Agree	2	1	3
Total		69	28	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.103[a]	4	.999
Likelihood Ratio	.103	4	.999
Linear-by-Linear Association	.004	1	.949
N of Valid Cases	97		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .87.

Table 49. # 31 Likert Scale (Gender)

Question 31: Employment opportunities influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q31_num * Q11_num	97	71.9%	38	28.1%	135	100.0%

		Gender		Total
		Male	Female	
Q31_num	Strongly Disagree	1	0	1
	Disagree	8	6	14
	Don't Agree or Disagree	17	3	20
	Agree	27	11	38
	Strongly Agree	16	8	24
Total		69	28	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.847[a]	4	.427
Likelihood Ratio	4.274	4	.370
Linear-by-Linear Association	.030	1	.863
N of Valid Cases	97		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .29.

Table 50. # 32 Likert Scale (Gender)

Question 32: I was enrolled in post-secondary studies when I was influenced to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q32_num * Q11_num	96	71.1%	39	28.9%	135	100.0%

		Gender		Total
		Male	Female	
Q32_num	Strongly Disagree	11	7	18
	Disagree	19	11	30
	Don't Agree or Disagree	11	3	14
	Agree	15	7	22
	Strongly Agree	12	0	12
Total		68	28	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.062[a]	4	.133
Likelihood Ratio	10.342	4	.035
Linear-by-Linear Association	4.225	1	.040
N of Valid Cases	96		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.50.

Table 51. # 33 Likert Scale (Gender)

Question 33: I was in the USA/Australia when I was influenced to select the institution abroad.
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q33_num * Q11_num	95	70.4%	40	29.6%	135	100.0%

		Gender		Total
		Male	Female	
Q33_num	Strongly Disagree	47	16	63
	Disagree	11	6	17
	Don't Agree or Disagree	6	1	7
	Agree	0	3	3
	Strongly Agree	3	2	5
Total		67	28	95

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.003[a]	4	.061
Likelihood Ratio	9.260	4	.055
Linear-by-Linear Association	2.233	1	.135
N of Valid Cases	95		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .88.

Table 52. # 34 Likert Scale (Gender)

Question 34: I was in a work-related setting when I was influenced to select the institution abroad.
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q34_num * Q11_num	96	71.1%	39	28.9%	135	100.0%

		Gender		Total
		Male	Female	
Q34_num	Strongly Disagree	28	9	37
	Disagree	12	4	16
	Don't Agree or Disagree	8	1	9
	Agree	15	10	25
	Strongly Agree	6	3	9
Total		69	27	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.495[a]	4	.479
Likelihood Ratio	3.637	4	.457
Linear-by-Linear Association	1.263	1	.261
N of Valid Cases	96		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 2.53.

Table 53. # 35 Likert Scale (Gender)

Question 35: I was unemployed when I was influenced to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q35_num * Q11_num	96	71.1%	39	28.9%	135	100.0%

		Gender		Total
		Male	Female	
Q35_num	Strongly Disagree	36	16	52
	Disagree	15	2	17
	Don't Agree or Disagree	10	2	12
	Agree	6	8	14
	Strongly Agree	1	0	1
Total		68	28	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.180[a]	4	.057
Likelihood Ratio	9.455	4	.051
Linear-by-Linear Association	.799	1	.371
N of Valid Cases	96		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .29.

Table 54. # 36 Likert Scale (Gender)

Question 36: The reputation of department or unit influenced me to select my institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q36_num * Q11_num	96	71.1%	39	28.9%	135	100.0%

		Gender		Total
		Male	Female	
Q36_num	Strongly Disagree	4	2	6
	Disagree	3	1	4
	Don't Agree or Disagree	14	9	23
	Agree	37	14	51
	Strongly Agree	10	2	12
Total		68	28	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.169[a]	4	.705
Likelihood Ratio	2.214	4	.696
Linear-by-Linear Association	.935	1	.334
N of Valid Cases	96		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is 1.17.

Table 55. # 37 Likert Scale (Gender)

Question 37: The reputation of professor or individual within department or unit influenced me to select my institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q37_num * Q11_num	96	71.1%	39	28.9%	135	100.0%

		Gender		Total
		Male	Female	
Q37_num	Strongly Disagree	8	4	12
	Disagree	10	9	19
	Don't Agree or Disagree	23	9	32
	Agree	20	5	25
	Strongly Agree	7	1	8
Total		68	28	96

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.257[a]	4	.262
Likelihood Ratio	5.262	4	.261
Linear-by-Linear Association	3.426	1	.064
N of Valid Cases	96		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.33.

Table 56. # 38 Likert Scale (Gender)

Question 38: The reputation of alumni where I study influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q38_num * Q11_num	97	71.9%	38	28.1%	135	100.0%

		Gender		Total
		Male	Female	
Q38_num	Strongly Disagree	10	6	16
	Disagree	13	5	18
	Don't Agree or Disagree	23	8	31
	Agree	18	8	26
	Strongly Agree	5	1	6
Total		69	28	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.213[a]	4	.876
Likelihood Ratio	1.237	4	.872
Linear-by-Linear Association	.462	1	.497
N of Valid Cases	97		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 1.73.

Table 57. # 39 Likert Scale (Gender)

Question 39: The reputation of work-related opportunities upon graduation influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q39_num * Q11_num	97	71.9%	38	28.1%	135	100.0%

		Gender		Total
		Male	Female	
Q39_num	Strongly Disagree	4	0	4
	Disagree	5	2	7
	Don't Agree or Disagree	16	6	22
	Agree	31	14	45
	Strongly Agree	13	6	19
Total		69	28	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.829[a]	4	.767
Likelihood Ratio	2.928	4	.570
Linear-by-Linear Association	.956	1	.328
N of Valid Cases	97		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.15.

Table 58. # 40 Likert Scale (Gender)

Question 40: The reputation of the institution where I study influenced me to select the institution abroad.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q40_num * Q11_num	97	71.9%	38	28.1%	135	100.0%

		Gender		Total
		Male	Female	
Q40_num	Strongly Disagree	8	3	11
	Disagree	8	5	13
	Don't Agree or Disagree	11	7	18
	Agree	35	11	46
	Strongly Agree	7	2	9
Total		69	28	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.220[a]	4	.695
Likelihood Ratio	2.171	4	.704
Linear-by-Linear Association	.707	1	.401
N of Valid Cases	97		

a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is 2.60.

Table 59. # 41 Likert Scale (Gender)

Question 41: Pathways to permanent residency (citizenship) influenced me to select the institution abroad because of the country in which it is located.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q41_num * Q11_num	97	71.9%	38	28.1%	135	100.0%

		Gender		Total
		Male	Female	
Q41_num	Strongly Disagree	23	16	39
	Disagree	19	8	27
	Don't Agree or Disagree	17	1	18
	Agree	5	1	6
	Strongly Agree	5	2	7
Total		69	28	97

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.014[a]	4	.091
Likelihood Ratio	9.459	4	.051
Linear-by-Linear Association	3.703	1	.054
N of Valid Cases	97		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.73.

APPENDIX F

MANN-WHITNEY TEST LIKERT SCALE RESPONSES BY GENDER

Table 60. # 27 Mann-Whitney Likert Scale (Gender)

Question 27: The rankings of the educational institution abroad influenced me to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q27_num	Male	63	44.17	2783.00
	Female	26	47.00	1222.00
	Total	89		

Test Statistics[a]

	Q27_num
Mann-Whitney U	767.000
Wilcoxon W	2783.000
Z	-.523
Asymp. Sig. (2-tailed)	.601

a. Grouping Variable: Q11_num

Table 61. # 28 Mann-Whitney Likert Scale (Gender)

Question 28: The country where my institution is located influenced me to go abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q28_num	Male	69	52.02	3589.50
	Female	28	41.55	1163.50
	Total	97		

Test Statistics[a]

	Q28_num
Mann-Whitney U	757.500
Wilcoxon W	1163.500
Z	-1.728
Asymp. Sig. (2-tailed)	.084

a. Grouping Variable: Q11_num

Table 62. # 29 Mann-Whitney Likert Scale (Gender)

Question 29: My family influenced me to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q29_num	Male	68	47.85	3253.50
	Female	28	50.09	1402.50
	Total	96		

Test Statistics[a]

	Q29_num
Mann-Whitney U	907.500
Wilcoxon W	3253.500
Z	-.373
Asymp. Sig. (2-tailed)	.709

a. Grouping Variable: Q11_num

Table 63. # 30 Mann-Whitney Likert Scale (Gender)

Question 30: My friends influenced me to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q30_num	Male	69	48.88	3373.00
	Female	28	49.29	1380.00
	Total	97		

Test Statistics[a]

	Q30_num
Mann-Whitney U	958.000
Wilcoxon W	3373.000
Z	-.066
Asymp. Sig. (2-tailed)	.947

a. Grouping Variable: Q11_num

Table 64. # 31 Mann-Whitney Likert Scale (Gender)

Question 31: Employment opportunities influenced me to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q31_num	Male	69	48.43	3342.00
	Female	28	50.39	1411.00
	Total	97		

Test Statistics[a]

	Q31_num
Mann-Whitney U	927.000
Wilcoxon W	3342.000
Z	-.325
Asymp. Sig. (2-tailed)	.745

a. Grouping Variable: Q11_num

Table 65. # 32 Mann-Whitney Likert Scale (Gender)

Question 32: I was enrolled in post-secondary studies when I was influenced to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q32_num	Male	68	52.06	3540.00
	Female	28	39.86	1116.00
	Total	96		

Test Statistics[a]

	Q32_num
Mann-Whitney U	710.000
Wilcoxon W	1116.000
Z	-2.006
Asymp. Sig. (2-tailed)	.045

a. Grouping Variable: Q11_num

Table 66. # 33 Mann-Whitney Likert Scale (Gender)

Question 33: I was in the USA/Australia when I was influenced to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q33_num	Male	67	45.96	3079.00
	Female	28	52.89	1481.00
	Total	95		

Test Statistics[a]

	Q33_num
Mann-Whitney U	801.000
Wilcoxon W	3079.000
Z	-1.335
Asymp. Sig. (2-tailed)	.182

a. Grouping Variable: Q11_num

Table 67. # 34 Mann-Whitney Likert Scale (Gender)

Question 34: I was in a work-related setting when I was influenced to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q34_num	Male	69	46.65	3219.00
	Female	27	53.22	1437.00
	Total	96		

Test Statistics[a]

	Q34_num
Mann-Whitney U	804.000
Wilcoxon W	3219.000
Z	-1.084
Asymp. Sig. (2-tailed)	.278

a. Grouping Variable: Q11_num

Table 68. # 35 Mann-Whitney Likert Scale (Gender)

Question 35: I was unemployed when I was influenced to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q35_num	Male	68	47.81	3251.00
	Female	28	50.18	1405.00
	Total	96		

Test Statistics[a]

	Q35_num
Mann-Whitney U	905.000
Wilcoxon W	3251.000
Z	-.416
Asymp. Sig. (2-tailed)	.678

a. Grouping Variable: Q11_num

Table 69. # 36 Mann-Whitney Likert Scale (Gender)

Question 36: The reputation of department or unit influenced me to select my institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q36_num	Male	68	50.52	3435.50
	Female	28	43.59	1220.50
	Total	96		

Test Statistics[a]

	Q36_num
Mann-Whitney U	814.500
Wilcoxon W	1220.500
Z	-1.214
Asymp. Sig. (2-tailed)	.225

a. Grouping Variable: Q11_num

Table 70. # 37 Mann-Whitney Likert Scale (Gender)

Question 37: The reputation of professor or individual within department or unit influenced me to select my institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q37_num	Male	68	51.94	3532.00
	Female	28	40.14	1124.00
	Total	96		

Test Statistics[a]

	Q37_num
Mann-Whitney U	718.000
Wilcoxon W	1124.000
Z	-1.951
Asymp. Sig. (2-tailed)	.051

a. Grouping Variable: Q11_num

Table 71. # 38 Mann-Whitney Likert Scale (Gender)

Question 38: The reputation of alumni where I study influenced me to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q38_num	Male	69	50.03	3452.00
	Female	28	46.46	1301.00
	Total	97		

Test Statistics[a]

	Q38_num
Mann-Whitney U	895.000
Wilcoxon W	1301.000
Z	-.584
Asymp. Sig. (2-tailed)	.559

a. Grouping Variable: Q11_num

Table 72. # 39 Mann-Whitney Likert Scale (Gender)

Question 39: The reputation of work-related opportunities upon graduation influenced me to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q39_num	Male	69	47.68	3290.00
	Female	28	52.25	1463.00
	Total	97		

Test Statistics[a]

	Q39_num
Mann-Whitney U	875.000
Wilcoxon W	3290.000
Z	-.772
Asymp. Sig. (2-tailed)	.440

a. Grouping Variable: Q11_num

Table 73. # 40 Mann-Whitney Likert Scale (Gender)

Question 40: The reputation of the institution where I study influenced me to select the institution abroad.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q40_num	Male	69	50.78	3504.00
	Female	28	44.61	1249.00
	Total	97		

Test Statistics[a]

	Q40_num
Mann-Whitney U	843.000
Wilcoxon W	1249.000
Z	-1.042
Asymp. Sig. (2-tailed)	.297

a. Grouping Variable: Q11_num

Table 74. # 41 Mann-Whitney Likert Scale (Gender)

Question 41: Pathways to permanent residency (citizenship) influenced me to select the institution abroad because of the country in which it is located.

Ranks

	Q11_num	N	Mean Rank	Sum of Ranks
Q41_num	Male	69	53.01	3658.00
	Female	28	39.11	1095.00
	Total	97		

Test Statistics[a]

	Q41_num
Mann-Whitney U	689.000
Wilcoxon W	1095.000
Z	-2.316
Asymp. Sig. (2-tailed)	.021

a. Grouping Variable: Q11_num

APPENDIX G

KRUSKAL-WALLIS TEST LIKERT SCALE RESPONSES BY UNIVERSITY

Table 75. # 27 Kruskal-Wallis Likert Scale (University)

Question 27: The rankings of the educational institution abroad influenced me to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q27_num	AUS-1	7	34.36
	USA-1	67	46.11
	USA-2	9	35.78
	AUS-2	6	58.83
	Total	89	

Test Statistics[a,b]

	Q27_num
Chi-square	5.192
Df	3
Asymp. Sig.	.158

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 76. # 28 Kruskal-Wallis Likert Scale (University)

Question 28: The country where my institution is located influenced me to go abroad.

Ranks

	univ	N	Mean Rank
Q28_num	AUS-1	8	64.50
	USA-1	74	47.79
	USA-2	9	49.22
	AUS-2	6	42.92
	Total	97	

Test Statistics[a,b]

	Q28_num
Chi-square	3.082
df	3
Asymp. Sig.	.379

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 77. # 29 Kruskal-Wallis Likert Scale (University)

Question 29: My family influenced me to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q29_num	AUS-1	8	45.56
	USA-1	73	47.92
	USA-2	9	61.61
	AUS-2	6	39.75
	Total	96	

Test Statistics[a,b]

	Q29_num
Chi-square	2.933
Df	3
Asymp. Sig.	.402

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 78. # 30 Kruskal-Wallis Likert Scale (University)

Question 30: My friends influenced me to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q30_num	AUS-1	8	43.31
	USA-1	74	48.58
	USA-2	9	55.39
	AUS-2	6	52.17
	Total	97	

Test Statistics[a,b]

	Q30_num
Chi-square	.954
df	3
Asymp. Sig.	.812

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 79. # 31 Kruskal-Wallis Likert Scale (University)

Question 31: Employment opportunities influenced me to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q31_num	AUS-1	8	53.13
	USA-1	74	47.95
	USA-2	9	56.50
	AUS-2	6	45.17
	Total	97	

Test Statistics[a,b]

	Q31_num
Chi-square	1.122
df	3
Asymp. Sig.	.772

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 80. # 32 Kruskal-Wallis Likert Scale (University)

Question 32: I was enrolled in post-secondary studies when I was influenced to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q32_num	AUS-1	8	33.63
	USA-1	73	49.08
	USA-2	9	53.50
	AUS-2	6	53.83
	Total	96	

Test Statistics[a,b]

	Q32_num
Chi-square	2.984
df	3
Asymp. Sig.	.394

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 81. # 33 Kruskal-Wallis Likert Scale (University)

Question 33: I was in the USA/Australia when I was influenced to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q33_num	AUS-1	8	44.63
	USA-1	72	48.07
	USA-2	9	55.33
	AUS-2	6	40.67
	Total	95	

Test Statistics[a,b]

	Q33_num
Chi-square	1.683
df	3
Asymp. Sig.	.641

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 82. # 34 Kruskal-Wallis Likert Scale (University)

Question 34: I was in a work-related setting when I was influenced to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q34_num	AUS-1	7	61.43
	USA-1	74	47.74
	USA-2	9	40.28
	AUS-2	6	55.08
	Total	96	

Test Statistics[a,b]

	Q34_num
Chi-square	2.918
df	3
Asymp. Sig.	.404

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 83. # 35 Kruskal-Wallis Likert Scale (University)

Question 35: I was unemployed when I was influenced to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q35_num	AUS-1	7	63.14
	USA-1	74	46.14
	USA-2	9	51.00
	AUS-2	6	56.75
	Total	96	

Test Statistics[a,b]

	Q35_num
Chi-square	3.688
Df	3
Asymp. Sig.	.297

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 84. # 36 Kruskal-Wallis Likert Scale (University)

Question 36: The reputation of department or unit influenced me to select my institution abroad.

Ranks

	univ	N	Mean Rank
Q36_num	AUS-1	8	38.19
	USA-1	73	49.84
	USA-2	9	43.11
	AUS-2	6	54.08
	Total	96	

Test Statistics[a,b]

	Q36_num
Chi-square	2.208
df	3
Asymp. Sig.	.530

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 85. – # 37 Kruskal-Wallis Likert Scale (University)

Question 37: The reputation of professor or individual within department or unit influenced me to select my institution abroad.

Ranks

	univ	N	Mean Rank
Q37_num	AUS-1	8	46.94
	USA-1	73	49.40
	USA-2	9	48.50
	AUS-2	6	39.67
	Total	96	

Test Statistics[a,b]

	Q37_num
Chi-square	.753
df	3
Asymp. Sig.	.861

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 86. – # 38 Kruskal-Wallis Likert Scale (University)

Question 38: The reputation of alumni where I study influenced me to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q38_num	AUS-1	8	34.94
	USA-1	74	52.50
	USA-2	9	54.06
	AUS-2	6	17.00
	Total	97	

Test Statistics[a,b]

	Q38_num
Chi-square	11.939
df	3
Asymp. Sig.	.008

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 87. # 39 Kruskal-Wallis Likert Scale (University)

Question 39: The reputation of work-related opportunities upon graduation influenced me to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q39_num	AUS-1	8	53.63
	USA-1	74	50.47
	USA-2	9	39.33
	AUS-2	6	39.25
	Total	97	

Test Statistics[a,b]

	Q39_num
Chi-square	2.497
df	3
Asymp. Sig.	.476

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 88. # 40 Kruskal-Wallis Likert Scale (University)

Question 40: The reputation of the institution where I study influenced me to select the institution abroad.

Ranks

	univ	N	Mean Rank
Q40_num	AUS-1	8	40.69
	USA-1	74	50.37
	USA-2	9	49.56
	AUS-2	6	42.33
	Total	97	

Test Statistics[a,b]

	Q40_num
Chi-square	1.375
df	3
Asymp. Sig.	.711

a. Kruskal Wallis Test

b. Grouping Variable: univ

Table 89. # 41 Kruskal-Wallis Likert Scale (University)

Question 41: Pathways to permanent residency (citizenship) influenced me to select the institution abroad because of the country in which it is located.

Ranks

	univ	N	Mean Rank
Q41_num	AUS-1	8	77.50
	USA-1	74	44.49
	USA-2	9	50.83
	AUS-2	6	63.83
	Total	97	

Test Statistics[a,b]

	Q41_num
Chi-square	13.022
df	3
Asymp. Sig.	.005

a. Kruskal Wallis Test

b. Grouping Variable: univ

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VITA

Louis Berends was born and raised in Penfield, New York. Before attending Loyola University Chicago, he attended the State University of New York, College at Brockport, where he earned a Bachelor of Science in Criminal Justice. During his undergraduate studies he also attended the University of Oxford for a term abroad where he studied comparative government and moral philosophy. Louis also spent an additional semester as a Research Assistant for a Member of Parliament at the British Houses of Parliament located in London, United Kingdom.

While at Loyola, Louis was elected President of the Comparative and International Education Graduate Student Association. Louis was awarded a graduate assistantship by the School of Education from 2005-2007. Louis is a CIES (Comparative and International Education Society) New Scholar Fellow (2010).

Currently, Louis is a University Relations Manager for SIT Study Abroad, a program of World Learning. He is also the Research and Scholarship Network Leader for NAFSA: Association of International Educators. He lives in Chicago, Illinois.